Associated Features and Disorders

An amnestic disorder is often preceded by an evolving clinical picture that includes confusion and disorientation, occasionally with attentional problems that suggest a delirium (e.g., Amnestic Disorder Due to Thiamine Deficiency). Confabulation, often evidenced by the recitation of imaginary events to fill gaps in memory, may be noted during the early stages of an amnestic disorder but tends to disappear with time. It may therefore be important to obtain corroborating information from family members or other informants. Profound amnesia may result in disorientation to place and time, but rarely to self. Disorientation to self may be encountered in individuals with a dementia but is unusual in an amnestic disorder. Most individuals with a severe Amnestic Disorder lack insight into their memory deficits and may explicitly deny the presence of severe memory impairment despite evidence to the contrary. This lack of insight may lead to accusations against others or, in rare instances, to agitation. Some individuals may acknowledge that they have a problem but appear unconcerned. Apathy, lack of initiative, emotional blandness, or other changes suggestive of altered personality function may be encountered. Individuals may be superficially friendly or agreeable, but they may have a shallow or diminished range of affective expression. Individuals with transient global amnesia often appear bewildered or befuddled. Subtle deficits in other cognitive functions may be noted, but, by definition, they are not severe enough to cause clinically significant impairment. Quantitative neuropsychological testing often demonstrates specific memory deficits in the absence of other cognitive disturbances. Performance on standardized tests that assess recall of well-known historical events or public figures may be variable among individuals with an Amnestic Disorder, depending on the nature and extent of the deficit.

Specific Culture Features

Cultural and educational background should be taken into consideration in the evaluation of memory. Individuals from certain backgrounds may not be familiar with the information used in certain tests of memory (e.g., date of birth in cultures that do not routinely celebrate birthdays).

Course

Age at onset and subsequent course of amnestic disorders may be quite variable, depending on the primary pathological process causing the amnestic disorder. Traumatic brain injury, stroke or other cerebrovascular events, or specific types of neurotoxic exposure (e.g., carbon monoxide poisoning) may lead to an acute onset of an amnestic disorder. Other conditions such as prolonged substance abuse, chronic neurotoxic exposure, or sustained nutritional deficiency may lead to an insidious onset. Transient amnesia due to a cerebrovascular etiology may be recurrent, with episodes lasting from several hours to several days. Amnestic Disorders Due to Head Trauma may last for variable amounts of time, with a characteristic pattern of greatest deficit immediately after injury and improvement during the ensuing 2 years (further improvement beyond 24 months has been noted, but less commonly). Disorders due

to destruction of middle-temporal lobe structures (e.g., from infarction, surgical ablation, or malnutrition occurring in the context of Alcohol Dependence) may cause persisting impairments.

Differential Diagnosis

Memory impairment is also a feature of **delirium** and **dementia.** In delirium, memory dysfunction occurs in association with impaired consciousness, with reduced ability to focus, sustain, or shift attention. In dementia, memory impairment must be accompanied by multiple cognitive deficits (i.e., aphasia, apraxia, agnosia, or a disturbance in executive functioning) that lead to clinically significant impairment.

An amnestic disorder must be distinguished from **Dissociative Amnesia** and amnesia occurring in the context of **other Dissociative Disorders** (e.g., **Dissociative Identity Disorder**). By definition, an amnestic disorder is due to the direct physiological effects of a general medical condition or substance use. Furthermore, amnesia in Dissociative Disorders typically does not involve deficits in learning and recalling new information; rather, individuals present with a circumscribed inability to recall previous memories, usually of a traumatic or stressful nature.

For memory disturbances (e.g., blackouts) that occur only during intoxication with or withdrawal from a drug of abuse, the appropriate **Substance Intoxication** or **Substance Withdrawal** should be diagnosed and a separate amnestic disorder diagnosis is not made. For memory disturbances that are associated with the use of medication, Adverse Effects of Medication Not Otherwise Specified (p. 736) may be noted, with the medication indicated by the use of an E-code (see Appendix G).

The presumed etiology of the amnestic disorder determines the diagnosis (text and criteria for each amnestic disorder diagnosis are provided separately later in this section). If it is judged that the memory disturbance is a consequence of the direct physiological effects of a general medical condition (including head trauma), then **Amnestic Disorder Due to a General Medical Condition** is diagnosed. If the memory disturbance results from the persisting effects of a substance (i.e., a drug of abuse, a medication, or toxin exposure), then **Substance-Induced Persisting Amnestic Disorder** is diagnosed. When both a substance (e.g., alcohol) and a general medical condition (e.g., head trauma) have had an etiological role in the development of the memory disturbance, both diagnoses are given. If it is not possible to establish a specific etiology (i.e., dissociative, substance induced, or due to a general medical condition), **Amnestic Disorder Not Otherwise Specified** is diagnosed.

Amnestic disorder must be distinguished from **Malingering** and from **Factitious Disorder.** This difficult distinction can be assisted by systematic memory testing (which often yields inconsistent results in Factitious Disorder or Malingering) and by the absence of a general medical condition or substance use that is etiologically related to the memory impairment.

Amnestic disorder should be distinguished from the less efficient memory characteristic of **Age-Related Cognitive Decline,** which is within the expected age-adjusted normative range for the individual.

294.0 Amnestic Disorder Due to a General Medical Condition

Diagnostic and Associated Features

The descriptive features of Amnestic Disorder Due to a General Medical Condition (Criteria A–C) are discussed on p. 172. In addition, the diagnosis requires that there must be evidence from the history, physical examination, or laboratory findings that the memory disturbance is the direct physiological consequence of a general medical condition (including physical trauma) (Criterion D).

In determining whether the amnestic disturbance is due to a general medical condition, the clinician must first establish the presence of a general medical condition. Further, the clinician must establish that the amnestic disturbance is etiologically related to the general medical condition through a physiological mechanism. A careful and comprehensive assessment of multiple factors is necessary to make this judgment. Although there are no infallible guidelines for determining whether the relationship between the amnestic disturbance and the general medical condition is etiological, several considerations provide some guidance in this area. One consideration is the presence of a temporal association between the onset, exacerbation, or remission of the general medical condition and that of the amnestic disturbance. A second consideration is the presence of features that are atypical of memory impairment in the context of a dissociative or other mental disorder (e.g., atypical age at onset or course). Evidence from the literature that suggests that there can be a direct association between the general medical condition in question and the development of memory impairment can provide a useful context in the assessment of a particular situation. In addition, the clinician must also judge that the disturbance is not better accounted for by a Dissociative Disorder, Substance-Induced Persisting Amnestic Disorder, or another primary mental disorder (e.g., Major Depressive Disorder). These determinations are explained in greater detail in the "Mental Disorders Due to a General Medical Condition" section (p. 181).

Individuals with Amnestic Disorder Due to a General Medical Condition often show other features of the primary systemic or cerebral disease that caused the memory impairment. However, disordered mental status may be the sole presenting feature. There are no specific or diagnostic features detectable with procedures such as magnetic resonance imaging (MRI) or computed tomography (CT). However, damage to mediotemporal lobe structures is common and may be reflected by enlargement of third ventricle or temporal horns or by structural atrophy detected on MRI.

Specifiers

The following specifiers may be noted to indicate the duration of the disturbance.

Transient. This specifier is used to indicate durations usually from several hours to a few days and for no more than 1 month. When the diagnosis is made within the first month without waiting for recovery, the term "provisional" may be added. "Transient global amnesia" is a specific form of transient amnestic disorder, characterized by a dense, transitory inability to learn new in-

formation and a variable impaired ability to recall events that occurred just before, or in the midst of, the etiological cerebrovascular problem.

Chronic. This specifier is used for disturbances that last for more than 1 month.

Recording Procedures

In recording the diagnosis of Amnestic Disorder Due to a General Medical Condition, the clinician should note the identified general medical condition judged to be causing the disturbance on Axis I (e.g., 294.0 Amnestic Disorder Due to Stroke). The ICD-9-CM code for the general medical condition should also be noted on Axis III (e.g., 436 stroke). (See Appendix G for a list of selected ICD-9-CM diagnostic codes for general medical conditions.)

Associated General Medical Conditions

An amnestic disorder often occurs as the result of pathological processes (e.g., closed head trauma, penetrating missile wounds, surgical intervention, hypoxia, infarction of the distribution of the posterior cerebral artery, and herpes simplex encephalitis) that cause damage to specific diencephalic and mediotemporal lobe structures (e.g., mammillary bodies, hippocampus, fornix). Pathology is most often bilateral, but deficits may arise from unilateral lesions. Transient Amnestic Disorder, when encountered as "transient global amnesia," is typically associated with cerebrovascular disease and pathology in the vertebrobasilar system. Transient Amnestic Disorder may also arise from episodic general medical conditions (e.g., metabolic conditions or seizures).

Differential Diagnosis

See p. 174 for a discussion of the differential diagnosis of amnestic disorders.

Diagnostic criteria for 294.0 Amnestic Disorder Due to . . . *[Indicate the General Medical Condition]*

A. The development of memory impairment as manifested by impairment in the ability to learn new information or the inability to recall previously learned information.

B. The memory disturbance causes significant impairment in social or occupational functioning and represents a significant decline from a previous level of functioning.

C. The memory disturbance does not occur exclusively during the course of a delirium or a dementia.

D. There is evidence from the history, physical examination, or laboratory findings that the disturbance is the direct physiological consequence of a general medical condition (including physical trauma).

Specify if:

Transient: if memory impairment lasts for 1 month or less
Chronic: if memory impairment lasts for more than 1 month

Coding note: Include the name of the general medical condition on Axis I, e.g., 294.0 Amnestic Disorder Due to Head Trauma; also code the general medical condition on Axis III (see Appendix G for codes).

Substance-Induced Persisting Amnestic Disorder

Diagnostic and Associated Features

The descriptive features of Substance-Induced Persisting Amnestic Disorder (Criteria A and B) are discussed on p. 172. The memory disturbance does not occur exclusively during the course of a delirium or a dementia and persists beyond the usual duration of Substance Intoxication or Withdrawal (Criterion C). In addition, to diagnose Substance-Induced Persisting Amnestic Disorder, there must be evidence from the history, physical examination, or laboratory findings that the memory disturbance is etiologically related to the persisting effects of substance use (e.g., a drug of abuse, a medication, toxin exposure) (Criterion D). This disorder is termed "persisting" because the memory disturbance persists long after the individual is no longer experiencing the effects of Substance Intoxication or Substance Withdrawal.

Features that are associated with Substance-Induced Persisting Amnestic Disorder are those associated with amnestic disorders generally (see p. 173). Even if currently abstinent from substance use, most individuals with this disorder have previously had a pattern of prolonged and heavy substance use that met criteria for Substance Dependence. Because these disorders persist long after use of the substance has stopped, blood or urine screens may be negative for the etiological substance. The age at onset is rarely before age 20 years. The resulting impairment may remain stable or worsen, even if substance use stops.

For a more detailed discussion of the features associated with Substance-Related Disorders, see p. 191.

Recording Procedures

The name of the diagnosis begins with the specific substance (e.g., alcohol, secobarbital) that is presumed to be causing the memory disturbance. The diagnostic code is selected from the listing of classes of substances provided in the criteria set. For substances that do not fit into any of the classes, the code for "Other Substance" should be used. In addition, for medications prescribed at therapeutic doses, the specific medication can be indicated by listing the appropriate E-code (see Appendix G). When more than one substance is judged to play a significant role in the development of the memory disturbance, each should be listed separately (e.g., 291.1 Alcohol-Induced Persisting Amnestic Disorder; 292.83 Secobarbital-Induced Persisting Amnestic Disorder). If a substance is judged to be the etiological factor but the specific substance or class of substances is unknown, the diagnosis is 292.83 Unknown Substance–Induced Persisting Amnestic Disorder.

Specific Substances

Substance-Induced Persisting Amnestic Disorder can occur in association with the following classes of substances: alcohol; sedatives, hypnotics, and anxiolytics; and other or unknown substances.

Alcohol-Induced Persisting Amnestic Disorder is apparently due to the vitamin deficiency that is associated with prolonged, heavy ingestion of alcohol. Neurological disturbances such as peripheral neuropathy, cerebellar ataxia, and myopathy are among the associated features. Alcohol-Induced Persisting Amnestic Disorder due to thiamine deficiency (Korsakoff's syndrome) often follows an acute episode of Wernicke's encephalopathy, a neurological condition manifested by confusion, ataxia, eye-movement abnormalities (gaze palsies, nystagmus), and other neurological signs. Gradually, these manifestations subside, but a major impairment of memory remains. If Wernicke's encephalopathy is treated early with large doses of thiamine, Alcohol-Induced Persisting Amnestic Disorder may not develop. Although age is not a specific etiological factor in the condition, individuals who develop Alcohol-Induced Persisting Amnestic Disorder generally have histories of many years of heavy alcohol use and are most often over age 40 years. Although the mode of onset is typically abrupt, some individuals may develop deficits insidiously over many years, due to repeated toxic and nutritional insults, prior to the emergence of a final, more dramatically impairing episode apparently related to thiamine deficiency. Once established, Alcohol-Induced Persisting Amnestic Disorder usually persists indefinitely, although there may be slight improvement over time and in a minority of the cases the condition can remit. Impairment is usually quite severe, and lifelong custodial care may be necessary. Sedative-, Hypnotic-, or Anxiolytic-Induced Persisting Amnestic Disorder can follow prolonged and heavy use of drugs from this class. The course is variable, and, unlike Alcohol-Induced Persisting Amnestic Disorder, full recovery can occur. Medications reported to cause amnestic disorders include anticonvulsants and intrathecal methotrexate. Toxins reported to evoke symptoms of

amnesia include lead, mercury, carbon monoxide, organophosphate insecticides, and industrial solvents.

Differential Diagnosis

See p. 174 for a general discussion of the differential diagnosis of amnestic disorders.

Diagnostic criteria for Substance-Induced Persisting Amnestic Disorder

A. The development of memory impairment as manifested by impairment in the ability to learn new information or the inability to recall previously learned information.

B. The memory disturbance causes significant impairment in social or occupational functioning and represents a significant decline from a previous level of functioning.

C. The memory disturbance does not occur exclusively during the course of a delirium or a dementia and persists beyond the usual duration of Substance Intoxication or Withdrawal.

D. There is evidence from the history, physical examination, or laboratory findings that the memory disturbance is etiologically related to the persisting effects of substance use (e.g., a drug of abuse, a medication).

Code [Specific Substance]–Induced Persisting Amnestic Disorder:

(291.1 Alcohol; 292.83 Sedative, Hypnotic, or Anxiolytic; 292.83 Other [or Unknown] Substance)

294.8 Amnestic Disorder Not Otherwise Specified

This category should be used to diagnose an amnestic disorder that does not meet criteria for any of the specific types described in this section.

An example is a clinical presentation of amnesia for which there is insufficient evidence to establish a specific etiology (i.e., dissociative, substance induced, or due to a general medical condition).

Other Cognitive Disorders

294.9 Cognitive Disorder Not Otherwise Specified

This category is for disorders that are characterized by cognitive dysfunction presumed to be due to the direct physiological effect of a general medical condition that do not meet criteria for any of the specific deliriums, dementias, or amnestic disorders listed in this section and that are not better classified as Delirium Not Otherwise Spec-

ified, Dementia Not Otherwise Specified, or Amnestic Disorder Not Otherwise Specified. For cognitive dysfunction due to a specific or unknown substance, the specific Substance-Related Disorder Not Otherwise Specified category should be used.

Examples include

1. Mild neurocognitive disorder: impairment in cognitive functioning as evidenced by neuropsychological testing or quantified clinical assessment, accompanied by objective evidence of a systemic general medical condition or central nervous system dysfunction (see p. 762 for suggested research criteria)
2. Postconcussional disorder: following a head trauma, impairment in memory or attention with associated symptoms (see p. 760 for suggested research criteria)

Mental Disorders Due to a General Medical Condition

A Mental Disorder Due to a General Medical Condition is characterized by the presence of mental symptoms that are judged to be the direct physiological consequence of a general medical condition. The term *general medical condition* refers to conditions that are coded on Axis III and that are listed outside the "Mental Disorders" chapter of ICD. (See Appendix G for a condensed list of these conditions.) As discussed in the "Introduction" to this manual, maintaining the distinction between mental disorders and general medical conditions does not imply that there are fundamental differences in their conceptualization, that mental disorders are unrelated to physical or biological factors or processes, or that general medical conditions are unrelated to behavioral or psychosocial factors or processes. The purpose of distinguishing general medical conditions from mental disorders is to encourage thoroughness in evaluation and to provide a shorthand term to enhance communication among health care providers. However, in clinical practice, it is expected that more specific terminology will be used to identify the specific condition involved.

In DSM-III-R, the Mental Disorders Due to a General Medical Condition and the Substance-Induced Disorders were called "organic" disorders and were listed together in a single section. This differentiation of "organic" mental disorders as a separate class implied that "nonorganic" or "functional" mental disorders were somehow unrelated to physical or biological factors or processes. DSM-IV eliminates the term *organic* and distinguishes those mental disorders that are due to a general medical condition from those that are substance induced and those that have no specified etiology. The term *primary mental disorder* is used as a shorthand to indicate those mental disorders that are not due to a general medical condition and that are not substance induced.

Text and criteria for three of these disorders (i.e., **Catatonic Disorder Due to a General Medical Condition, Personality Change Due to a General Medical Condition,** and **Mental Disorder Not Otherwise Specified Due to a General Medical Condition**) are included in this section. The text and criteria for the conditions listed below are placed in other sections of the manual with disorders with which they share phenomenology. The manual has been organized in this fashion to alert clinicians to consider these disorders in making a differential diagnosis.

293.0 Delirium Due to a General Medical Condition Text and criteria are included in the "Delirium, Dementia, and Amnestic and Other Cognitive Disorders" section, p. 141.

___.__ **Dementia Due to a General Medical Condition** Text and criteria are included in the "Delirium, Dementia, and Amnestic and Other Cognitive Disorders" section, p. 162.

294.0 Amnestic Disorder Due to a General Medical Condition Text and criteria are included in the "Delirium, Dementia, and Amnestic and Other Cognitive Disorders" section, p. 175.

293.8x Psychotic Disorder Due to a General Medical Condition Text and criteria are included in the "Schizophrenia and Other Psychotic Disorders" section, p. 334.

293.83 Mood Disorder Due to a General Medical Condition Text and criteria are included in the "Mood Disorders" section, p. 401.

293.84 Anxiety Disorder Due to a General Medical Condition Text and criteria are included in the "Anxiety Disorders" section, p. 476.

___.__ **Sexual Dysfunction Due to a General Medical Condition** Text and criteria are included in the "Sexual and Gender Identity Disorders" section, p. 558.

780.5x Sleep Disorder Due to a General Medical Condition Text and criteria are included in the "Sleep Disorders" section, p. 651.

Diagnostic Features

Three criteria appear in the criteria sets for each of the Mental Disorders Due to a General Medical Condition:

> **B. There is evidence from the history, physical examination, or laboratory findings that the disturbance is the direct physiological consequence of a general medical condition.**

Application of this criterion requires two separate judgments: that a general medical condition is present (ascertained by history, physical examination, or laboratory assessment) and that the disturbance (e.g., psychotic, mood, anxiety symptoms) is etiologically related to the general medical condition through a physiological mechanism. It should be recognized that whether or not a disturbance *is* or *is not* due to the direct physiological effects of a general medical condition often represents a false dichotomy—that is, a general medical condition may be part of but not the sole etiology of the disturbance. In any case, although there are no infallible guidelines for determining whether the relationship between the general medical condition and the disturbance is etiological, several considerations provide guidance in this area. One consideration is the presence of a temporal association between the onset, exacerbation, or remission of the general medical condition and that of the mental disorder (e.g., symptoms of anxiety in an individual with a parathyroid adenoma that resolve after surgical excision restores a normal serum calcium level). Although evidence of a close temporal relationship is often useful in making a judgment about etiology,

there are many exceptions. For example, Psychotic Disorder Due to Epilepsy can emerge many years after the onset of seizures. Alternatively, symptoms and signs of a mental disorder can be among the first manifestations of a systemic or cerebral disease, appearing months or more before the detection of the underlying pathological process (e.g., depressed mood preceding choreiform movements in Huntington's disease). Mental Disorders Due to a General Medical Condition can also persist after the general medical condition has resolved (e.g., depressed mood persisting after thyroid hormone replacement). Moreover, a Mental Disorder Due to a General Medical Condition can be amenable to symptomatic treatment even while the general medical condition remains active (e.g., depression in epilepsy). Treatment targeted to the general medical condition that alleviates the symptoms of both the general medical condition and the mental disturbance may provide stronger evidence of an etiological relationship.

A second important consideration is the presence of features that are atypical of the primary mental disorder. The most common example is an atypical age at onset or course (e.g., first appearance of schizophrenic-like symptoms in a 75-year-old individual). There may be unusual associated features (e.g., visual or tactile hallucinations accompanying major depressive–like episodes) or diagnostic features that are disproportionately more severe than would be expected given the overall presentation (e.g., a 50-pound weight loss in an individual with otherwise mild depressive symptoms might suggest the presence of a underlying general medical condition). The clinician should be alerted especially by the presence of significant cognitive deficits that are out of proportion to those typically encountered with the primary mental disorder.

Evidence from the literature of a well-established or frequently encountered association between the general medical condition and the phenomenology of a specific mental disorder may be useful in the evaluation of a particular situation. Such studies may provide evidence of a plausible etiological association between the mental symptoms and the general medical condition (e.g., lesion location or a known pathophysiological mechanism likely to affect brain function) and of an elevated prevalence rate of the mental symptoms (i.e., above the base rate in an appropriate control population) in individuals with the general medical condition. Although such evidence suggests a possible causal link between a mental disorder and a particular general medical condition, it is not sufficient for making a determination in an individual case because research studies generally reflect group means, whereas the clinician seeks to make a decision regarding an individual. The text for each of the specific Mental Disorders Due to a General Medical Condition contains a list of some of the general medical conditions noted in the literature to be associated with that specific mental disorder.

C. The disturbance is not better accounted for by another mental disorder.

In making the diagnosis of a Mental Disorder Due to a General Medical Condition, it is necessary to rule out primary mental disorders and mental disorders that are substance induced. Ruling out primary mental disorders is often difficult because individuals with primary mental disorders commonly have co-occurring general medical conditions that are *not* causing the mental symptoms through direct physiological

mechanisms. There may be a number of other relationships between a mental disorder and a general medical condition: the general medical condition may exacerbate the symptoms or complicate treatment of the mental disorder; the two may be related through nonphysiological mechanisms; or the co-occurrence may be coincidental. For example, when depressive symptoms are precipitated by the general medical condition acting as a psychosocial stressor, rather than resulting from the direct physiological effects of the general medical condition, the diagnosis would be Major Depressive Disorder or Adjustment Disorder With Depressed Mood. In an individual with depressive symptoms that co-occur with a general medical condition, a history of many Major Depressive Episodes or a family history of depression would suggest a diagnosis of Major Depressive Disorder, rather than a Mood Disorder Due to a General Medical Condition. Finally, the clinician should also consider whether the mental symptoms are caused by a drug of abuse, a medication, or toxin exposure (see p. 209 for guidelines). This is especially important because many individuals with general medical conditions receive medications that may have the potential to cause a Substance-Induced Mental Disorder.

D. The disturbance does not occur exclusively during the course of a delirium.

If symptoms (e.g., psychotic, mood, anxiety) occur only during periods of delirium, they are considered to be associated features of the delirium and do not warrant a separate diagnosis. These conditions (e.g., Mood Disorder Due to a General Medical Condition) can be diagnosed separately only if they occur at times other than during the delirium.

Recording Procedures

In recording a Mental Disorder Due to a General Medical Condition, the clinician should note both the type of mental disturbance and the etiological general medical condition on Axis I (e.g., 293.83 Mood Disorder Due to Hypothyroidism, With Depressive Features). The ICD-9-CM code for the general medical condition (e.g., 244.9 hypothyroidism) should also be noted on Axis III. In situations in which the clinician has determined that the mental symptoms are not a direct physiological consequence of the general medical condition, the primary mental disorder should be coded on Axis I and the general medical condition should be coded on Axis III. (See Appendix G for a list of selected ICD-9-CM diagnostic codes for general medical conditions.)

Differential Diagnosis

A Mental Disorder Due to a General Medical Condition is distinguished from a **primary mental disorder** by applying the criteria discussed earlier in this section under "Diagnostic Features." When symptoms of a mental disorder and a general medical condition co-occur, it is especially important to determine whether the etiological relationship, if any, is directly physiological (in which case the diagnosis is Mental Disorder Due to a General Medical Condition) or through another mechanism (in which case the diagnosis is a primary mental disorder). In some cases, the development of a general medical condition or the presence of associated disability may precipitate or

exacerbate a mental disorder, with no known physiological link (e.g., the disability associated with osteoarthritis may play a role in the development of depressive symptoms or a Major Depressive Episode, but there is no known physiological mechanism underlying the etiological relationship between the arthritis and the depressive symptoms). In this situation, the primary mental disorder (i.e., Adjustment Disorder or Major Depressive Disorder) should be diagnosed on Axis I and the general medical condition (i.e., osteoarthritis) should be listed on Axis III.

A Mental Disorder Due to a General Medical Condition must also be distinguished from a **Substance-Induced Disorder.** If there is evidence of recent or prolonged use of a substance (including medications with psychoactive effects), withdrawal from a substance, or exposure to a toxin, a Substance-Induced Disorder should be considered. It may be useful to obtain a urine or blood drug screen or other appropriate laboratory evaluation. Symptoms that occur during or shortly after (i.e., within 4 weeks of) significant substance intoxication or withdrawal or medication use may be especially indicative of a Substance-Induced Disorder, depending on the type or the amount of the substance used or the duration of use.

Delirium, dementia, psychotic, mood, anxiety, or sleep symptoms or a sexual dysfunction may be caused by the **combined effects of a general medical condition and substance use** (including medications). In such situations, both diagnoses (e.g., Mood Disorder Due to a General Medical Condition and Substance-Induced Mood Disorder) should be listed. If it is not possible to ascertain whether the mental symptoms are due to a general medical condition or are substance induced, the Not Otherwise Specified category may be used (see discussion below).

When, as often happens, the presentation of a Mental Disorder Due to a General Medical Condition contains a mix of different symptoms (e.g., mood and anxiety), it is generally desirable to assign a single diagnosis based on which symptoms predominate in the clinical presentation. In some situations, it is not possible to determine whether the mental symptoms are primary, due to a general medical condition, or substance induced. The Not Otherwise Specified category should be used in such situations.

293.89 Catatonic Disorder Due to a General Medical Condition

Diagnostic Features

The essential feature of Catatonic Disorder Due to a General Medical Condition is the presence of catatonia that is judged to be due to the direct physiological effects of a general medical condition. Catatonia is manifested by any of the following: motoric immobility, excessive motor activity, extreme negativism or mutism, peculiarities of voluntary movement, echolalia, or echopraxia (Criterion A). There must be evidence from the history, physical examination, or laboratory findings that the catatonia is the direct physiological consequence of a general medical condition (Criterion B). The diagnosis is not given if the catatonia is better accounted for by another mental disorder (e.g., Manic Episode) (Criterion C) or if it occurs exclusively during the course of a delirium (Criterion D).

Motoric immobility may be manifested by catalepsy (waxy flexibility) or stupor. The excessive motor activity is apparently purposeless and is not influenced by external stimuli. There may be extreme negativism that is manifested by resistance to all instructions or the maintenance of a rigid posture against attempts to be moved. Peculiarities of voluntary movement are manifested by the voluntary assumption of inappropriate or bizarre postures or by prominent grimacing. Echolalia is the pathological, parrotlike, and apparently senseless repetition of a word or phrase just spoken by another person. Echopraxia is the repetitive imitation of the movements of another person.

Recording Procedures

In recording Catatonic Disorder Due to a General Medical Condition, the clinician should note both the specific phenomenology of the disturbance and the identified general medical condition judged to be causing the disturbance on Axis I (e.g., 293.89 Catatonic Disorder Due to Malignant Neoplasm of Brain). The ICD-9-CM code for the general medical condition (e.g., 191.9 malignant neoplasm of brain) should also be noted on Axis III. (See Appendix G for a list of selected ICD-9-CM diagnostic codes for general medical conditions.)

Associated General Medical Conditions

A variety of general medical conditions may cause catatonia, especially neurological conditions (e.g., neoplasms, head trauma, cerebrovascular disease, encephalitis) and metabolic conditions (e.g., hypercalcemia, hepatic encephalopathy, homocystinuria, diabetic ketoacidosis). The associated physical examination findings, laboratory findings, and patterns of prevalence and onset reflect those of the etiological general medical condition.

Differential Diagnosis

A separate diagnosis of Catatonic Disorder Due to a General Medical Condition is not given if the catatonia occurs exclusively during the course of a **delirium**. If the individual is currently taking neuroleptic medication, **Medication-Induced Movement Disorders** should be considered (e.g., abnormal positioning may be due to Neuroleptic-Induced Acute Dystonia). Catatonic symptoms may also be present in Schizophrenia and Mood Disorders. **Schizophrenia, Catatonic Type**, is distinguished by the absence of evidence of a general medical condition that is etiologically related to the catatonia, and by the presence of other symptoms characteristic of Schizophrenia (e.g., delusions, hallucinations, disorganized speech, negative symptoms). A **Mood Disorder With Catatonic Features** is likewise differentiated by the absence of evidence of a general medical condition that is etiologically related to the catatonia, and by the presence of symptoms that meet the criteria for a Major Depressive or Manic Episode.

Diagnostic criteria for 293.89 Catatonic Disorder Due to . . .
[Indicate the General Medical Condition]

A. The presence of catatonia as manifested by motoric immobility, excessive motor activity (that is apparently purposeless and not influenced by external stimuli), extreme negativism or mutism, peculiarities of voluntary movement, or echolalia or echopraxia.

B. There is evidence from the history, physical examination, or laboratory findings that the disturbance is the direct physiological consequence of a general medical condition.

C. The disturbance is not better accounted for by another mental disorder (e.g., a Manic Episode).

D. The disturbance does not occur exclusively during the course of a delirium.

Coding note: Include the name of the general medical condition on Axis I, e.g., 293.89 Catatonic Disorder Due to Hepatic Encephalopathy; also code the general medical condition on Axis III (see Appendix G for codes).

310.1 Personality Change Due to a General Medical Condition

Diagnostic Features

The essential feature of a Personality Change Due to a General Medical Condition is a persistent personality disturbance that is judged to be due to the direct physiological effects of a general medical condition. The personality disturbance represents a change from the individual's previous characteristic personality pattern. In children, this condition may be manifested as a marked deviation from normal development rather than as a change in a stable personality pattern (Criterion A). There must be evidence from the history, physical examination, or laboratory findings that the personality change is the direct physiological consequence of a general medical condition (Criterion B). The diagnosis is not given if the disturbance is better accounted for by another mental disorder (Criterion C). The diagnosis is not given if the disturbance occurs exclusively during the course of a delirium (Criterion D). The disturbance must also cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion E).

Common manifestations of the personality change include affective instability, poor impulse control, outbursts of aggression or rage grossly out of proportion to any precipitating psychosocial stressor, marked apathy, suspiciousness, or paranoid ideation. The phenomenology of the change is indicated using the subtypes listed below. An individual with the disorder is often characterized by others as "not himself [or herself]." Although it shares the term "personality" with the Axis II Personality Disorders, this diagnosis is coded on Axis I and is distinct by virtue of its specific etiology, different phenomenology, and more variable onset and course.

The clinical presentation in a given individual may depend on the nature and localization of the pathological process. For example, injury to the frontal lobes may yield such symptoms as lack of judgment or foresight, facetiousness, disinhibition, and euphoria. Right hemisphere strokes have often been shown to evoke personality changes in association with unilateral spatial neglect, anosognosia (inability of the individual to recognize a bodily or functional deficit such as the existence of hemiparesis), motor impersistence, and other neurological deficits.

Subtypes

The particular personality change can be specified by indicating the symptom presentation that predominates in the clinical presentation:

Labile Type. This subtype is used if the predominant feature is affective lability.
Disinhibited Type. This subtype is used if the predominant feature is poor impulse control (e.g., as evidenced by sexual indiscretions).
Aggressive Type. This subtype is used if the predominant feature is aggressive behavior.
Apathetic Type. This subtype is used if the predominant feature is marked apathy and indifference.
Paranoid Type. This subtype is used if the predominant feature is suspiciousness or paranoid ideation.
Other Type. This subtype is for presentations not characterized by any of the above subtypes.
Combined Type. This subtype is used if more than one feature predominates in the clinical picture.
Unspecified Type.

Recording Procedures

In recording Personality Change Due to a General Medical Condition, the clinician should note both the specific phenomenology of the disturbance, including appropriate subtype, and the general medical condition judged to be causing the disturbance on Axis I (e.g., 310.1 Personality Change Due to Systemic Lupus Erythematosus, Paranoid Type). The ICD-9-CM code for the general medical condition (e.g., 710.0 systemic lupus erythematosus) should also be noted on Axis III. (See Appendix G for a list of selected ICD-9-CM diagnostic codes for general medical conditions.)

Associated General Medical Conditions

A variety of neurological and other general medical conditions may cause personality changes, including central nervous system neoplasms, head trauma, cerebrovascular disease, Huntington's disease, epilepsy, infectious conditions with central nervous system involvement (e.g., human immunodeficiency virus), endocrine conditions (e.g., hypothyroidism, hypo- and hyperadrenocorticism), and autoimmune conditions with central nervous system involvement (e.g., systemic lupus erythematosus).

The associated physical examination findings, laboratory findings, and patterns of prevalence and onset reflect those of the neurological or other general medical condition involved.

Differential Diagnosis

Chronic general medical conditions associated with pain and disability can also be associated with changes in personality. The diagnosis of Personality Change Due to a General Medical Condition is given only if a direct pathophysiological mechanism can be established. This diagnosis is not given if the change is due to a behavioral or psychological adjustment or response to a general medical condition (e.g., dependent behaviors that result from a need for the assistance of others following a severe head trauma, cardiovascular disease, or dementia). Personality change is a frequent associated feature of a **delirium** or **dementia**. A separate diagnosis of Personality Change Due to a General Medical Condition is not given if the change occurs exclusively during the course of a **delirium**. However, the diagnosis of Personality Change Due to a General Medical Condition may be given in addition to the diagnosis of dementia if the personality change is a prominent part of the clinical presentation. Furthermore, the diagnosis of Personality Change Due to a General Medical Condition is not given if the disturbance is better accounted for by **another Mental Disorder Due to a General Medical Condition** (e.g., Mood Disorder Due to Brain Tumor, With Depressive Features).

Personality changes may also occur in the context of **Substance Dependence**, especially if the dependence is long-standing. The clinician should inquire carefully about the nature and extent of substance use. If the clinician wishes to indicate an etiological relationship between the personality change and substance use, the Not Otherwise Specified category for the specific substance (e.g., Cocaine-Related Disorder Not Otherwise Specified) can be used.

Marked personality changes may also be an **associated feature of other mental disorders** (e.g., Schizophrenia, Delusional Disorder, Mood Disorders, Impulse-Control Disorders Not Elsewhere Classified, Panic Disorder). However, in these disorders, no specific physiological factor is judged to be etiologically related to the personality change. Personality Change Due to a General Medical Condition can be distinguished from a **Personality Disorder** by the requirement for a clinically significant change from baseline personality functioning and the presence of a specific etiological general medical condition.

Diagnostic criteria for 310.1 Personality Change Due to . . . *[Indicate the General Medical Condition]*

A. A persistent personality disturbance that represents a change from the individual's previous characteristic personality pattern. (In children, the disturbance involves a marked deviation from normal development or a significant change in the child's usual behavior patterns lasting at least 1 year).

B. There is evidence from the history, physical examination, or laboratory findings that the disturbance is the direct physiological consequence of a general medical condition.

C. The disturbance is not better accounted for by another mental disorder (including other Mental Disorders Due to a General Medical Condition).

D. The disturbance does not occur exclusively during the course of a delirium.

E. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

Specify type:

Labile Type: if the predominant feature is affective lability
Disinhibited Type: if the predominant feature is poor impulse control as evidenced by sexual indiscretions, etc.
Aggressive Type: if the predominant feature is aggressive behavior
Apathetic Type: if the predominant feature is marked apathy and indifference
Paranoid Type: if the predominant feature is suspiciousness or paranoid ideation
Other Type: if the presentation is not characterized by any of the above subtypes
Combined Type: if more than one feature predominates in the clinical picture
Unspecified Type

Coding note: Include the name of the general medical condition on Axis I, e.g., 310.1 Personality Change Due to Temporal Lobe Epilepsy; also code the general medical condition on Axis III (see Appendix G for codes).

293.9 Mental Disorder Not Otherwise Specified Due to a General Medical Condition

This residual category should be used for situations in which it has been established that the disturbance is caused by the direct physiological effects of a general medical condition, but the criteria are not met for a specific Mental Disorder Due to a General Medical Condition (e.g., dissociative symptoms due to complex partial seizures).

Coding note: Include the name of the general medical condition on Axis I, e.g., 293.9 Mental Disorder Not Otherwise Specified Due to HIV Disease; also code the general medical condition on Axis III (see Appendix G for codes).

Substance-Related Disorders

The Substance-Related Disorders include disorders related to the taking of a drug of abuse (including alcohol), to the side effects of a medication, and to toxin exposure. In this manual, the term *substance* can refer to a drug of abuse, a medication, or a toxin. The substances discussed in this section are grouped into 11 classes: alcohol; amphetamine or similarly acting sympathomimetics; caffeine; cannabis; cocaine; hallucinogens; inhalants; nicotine; opioids; phencyclidine (PCP) or similarly acting arylcyclohexylamines; and sedatives, hypnotics, or anxiolytics. Although these 11 classes appear in alphabetical order, the following classes share similar features: alcohol shares features with the sedatives, hypnotics, and anxiolytics; and cocaine shares features with amphetamines or similarly acting sympathomimetics. Also included in this section are Polysubstance Dependence and Other or Unknown Substance–Related Disorders (which include most disorders related to medications or toxins).

Many prescribed and over-the-counter medications can also cause Substance-Related Disorders. Symptoms generally occur at high doses of the medication and usually disappear when the dosage is lowered or the medication is stopped. Medications that may cause Substance-Related Disorders include, but are not limited to, anesthetics and analgesics, anticholinergic agents, anticonvulsants, antihistamines, antihypertensive and cardiovascular medications, antimicrobial medications, antiparkinsonian medications, chemotherapeutic agents, corticosteroids, gastrointestinal medications, muscle relaxants, nonsteroidal anti-inflammatory medications, other over-the-counter medications, antidepressant medications, and disulfiram.

Exposure to a wide range of other chemical substances can also lead to the development of a Substance-Related Disorder. Toxic substances that may cause Substance-Related Disorders include, but are not limited to, heavy metals (e.g., lead or aluminum), rat poisons containing strychnine, pesticides containing nicotine, or acetylcholinesterase inhibitors, nerve gases, ethylene glycol (antifreeze), carbon monoxide, and carbon dioxide. The volatile substances (e.g., fuel, paint) are classified as "inhalants" (see p. 257) if they are used for the purpose of becoming intoxicated; they are considered "toxins" if exposure is accidental or part of intentional poisoning. Impairments in cognition or mood are the most common symptoms associated with toxic substances, although anxiety, hallucinations, delusions, or seizures can also result. Symptoms usually disappear when the individual is no longer exposed to the substance, but resolution of symptoms can take weeks or months and may require treatment.

The Substance-Related Disorders are divided into two groups: the Substance Use Disorders (Substance Dependence and Substance Abuse) and the Substance-Induced Disorders (Substance Intoxication, Substance Withdrawal, Substance-Induced Delirium, Substance-Induced Persisting Dementia, Substance-Induced Persisting Am-

nestic Disorder, Substance-Induced Psychotic Disorder, Substance-Induced Mood Disorder, Substance-Induced Anxiety Disorder, Substance-Induced Sexual Dysfunction, and Substance-Induced Sleep Disorder). The section begins with the text and criteria sets for Substance Dependence, Abuse, Intoxication, and Withdrawal that are applicable across classes of substances. This is followed by general comments concerning associated features; culture, age, and gender features; course; impairment and complications; familial pattern; differential diagnosis; and recording procedures that apply to all substance classes. The remainder of the section is organized by class of substance and describes the specific aspects of Dependence, Abuse, Intoxication, and Withdrawal for each of the 11 classes of substances. It should be noted that the Prevalence sections of the substance-specific texts contain survey data indicating rates of substance use in various age groups, as well as the lifetime and 1-year prevalence of Dependence and Abuse. To facilitate differential diagnosis, the text and criteria for the remaining Substance-Induced Disorders are included in the sections of the manual with disorders with which they share phenomenology (e.g., Substance-Induced Mood Disorder is included in the "Mood Disorders" section). The diagnoses associated with each specific group of substances are shown in Table 1.

Substance Use Disorders

Substance Dependence

Features

The essential feature of Substance Dependence is a cluster of cognitive, behavioral, and physiological symptoms indicating that the individual continues use of the substance despite significant substance-related problems. There is a pattern of repeated self-administration that can result in tolerance, withdrawal, and compulsive drug-taking behavior. A diagnosis of Substance Dependence can be applied to every class of substances except caffeine. The symptoms of Dependence are similar across the various categories of substances, but for certain classes some symptoms are less salient, and in a few instances not all symptoms apply (e.g., withdrawal symptoms are not specified for Hallucinogen Dependence). Although not specifically listed as a criterion item, "craving" (a strong subjective drive to use the substance) is likely to be experienced by most (if not all) individuals with Substance Dependence. Dependence is defined as a cluster of three or more of the symptoms listed below occurring at any time in the same 12-month period.

Tolerance (Criterion 1) is the need for greatly increased amounts of the substance to achieve intoxication (or the desired effect) or a markedly diminished effect with continued use of the same amount of the substance. The degree to which tolerance develops varies greatly across substances. Furthermore, for a specific drug, varied degrees of tolerance may develop for its different central nervous system effects. For example, for opioids, tolerance to respiratory depression and tolerance to analgesia develop at different rates. Individuals with heavy use of opioids and stimulants can

Table 1. Diagnoses associated with class of substances

	Dependence	Abuse	Intoxication	Withdrawal	Intoxication Delirium	Withdrawal Delirium	Dementia	Amnestic Disorder	Psychotic Disorders	Mood Disorders	Anxiety Disorders	Sexual Dysfunctions	Sleep Disorders
Alcohol	X	X	X	X	I	W	P	P	I/W	I/W	I/W	I	I/W
Amphetamines	X	X	X	X	I				I	I/W	I	I	I/W
Caffeine			X								I		I
Cannabis	X	X	X		I				I		I		
Cocaine	X	X	X	X	I				I	I/W	I/W	I	I/W
Hallucinogens	X	X	X		I				I*	I	I		
Inhalants	X	X	X		I		P		I	I	I		
Nicotine	X			X									
Opioids	X	X	X	X	I				I	I		I	I/W
Phencyclidine	X	X	X		I				I	I	I		
Sedatives, hypnotics, or anxiolytics	X	X	X	X	I	W	P	P	I/W	I/W	W	I	I/W
Polysubstance	X												
Other	X	X	X	X	I	W	P	P	I/W	I/W	I/W	I	I/W

*Also Hallucinogen Persisting Perception Disorder (Flashbacks).

Note: X, I, W, I/W, or P indicates that the category is recognized in DSM-IV. In addition, *I* indicates that the specifier With Onset During Intoxication may be noted for the category (except for Intoxication Delirium); *W* indicates that the specifier With Onset During Withdrawal may be noted for the category (except for Withdrawal Delirium); and *I/W* indicates that either With Onset During Intoxication or With Onset During Withdrawal may be noted for the category. *P* indicates that the disorder is Persisting.

develop substantial (e.g., 10-fold) levels of tolerance, often to a dosage that would be lethal to a nonuser. Alcohol tolerance can also be pronounced, but is usually less extreme than for amphetamine. Many individuals who smoke cigarettes consume more than 20 cigarettes a day, an amount that would have produced symptoms of toxicity when they first started smoking. Individuals with heavy use of cannabis or phencyclidine (PCP) are generally not aware of having developed tolerance (although it has been demonstrated in animal studies and in some individuals). Tolerance may be difficult to determine by history alone when the substance used is illegal and perhaps mixed with various diluents or with other substances. In such situations, laboratory tests may be helpful (e.g., high blood levels of the substance coupled with little evidence of intoxication suggest that tolerance is likely). Tolerance must also be distinguished from individual variability in the initial sensitivity to the effects of particular substances. For example, some first-time drinkers show very little evidence of intoxication with three or four drinks, whereas others of similar weight and drinking histories have slurred speech and incoordination.

Withdrawal (Criterion 2a) is a maladaptive behavioral change, with physiological and cognitive concomitants, that occurs when blood or tissue concentrations of a substance decline in an individual who had maintained prolonged heavy use of the substance. After developing unpleasant withdrawal symptoms, the person is likely to take the substance to relieve or to avoid those symptoms (Criterion 2b), typically using the substance throughout the day beginning soon after awakening. Withdrawal symptoms, which are generally the opposite of the acute effects of the substance, vary greatly across the classes of substances, and separate criteria sets for Withdrawal are provided for most of the classes. Marked and generally easily measured physiological signs of withdrawal are common with alcohol, opioids, and sedatives, hypnotics, and anxiolytics. Withdrawal signs and symptoms are often present, but may be less apparent, with stimulants such as amphetamines and cocaine, as well as with nicotine and cannabis. No significant withdrawal is seen even after repeated use of hallucinogens. Withdrawal from phencyclidine and related substances has not yet been described in humans (although it has been demonstrated in animals). Neither tolerance nor withdrawal is necessary or sufficient for a diagnosis of Substance Dependence. However, for most classes of substances, a past history of tolerance or withdrawal is associated with a more severe clinical course (i.e., an earlier onset of Dependence, higher levels of substance intake, and a greater number of substance-related problems). Some individuals (e.g., those with Cannabis Dependence) show a pattern of compulsive use without obvious signs of tolerance or withdrawal. Conversely, some general medical and postsurgical patients without Opioid Dependence may develop a tolerance to prescribed opioids and experience withdrawal symptoms without showing any signs of compulsive use. The specifiers With Physiological Dependence and Without Physiological Dependence are provided to indicate the presence or absence of tolerance or withdrawal.

The following items describe the pattern of compulsive substance use that is characteristic of Dependence. The individual may take the substance in larger amounts or over a longer period than was originally intended (e.g., continuing to drink until severely intoxicated despite having set a limit of only one drink) (Criterion 3). The individual may express a persistent desire to cut down or regulate substance use. Often, there have been many unsuccessful efforts to decrease or discontinue use (Criterion 4).

The individual may spend a great deal of time obtaining the substance, using the substance, or recovering from its effects (Criterion 5). In some instances of Substance Dependence, virtually all of the person's daily activities revolve around the substance. Important social, occupational, or recreational activities may be given up or reduced because of substance use (Criterion 6). The individual may withdraw from family activities and hobbies in order to use the substance in private or to spend more time with substance-using friends. Despite recognizing the contributing role of the substance to a psychological or physical problem (e.g., severe depressive symptoms or damage to organ systems), the person continues to use the substance (Criterion 7). The key issue in evaluating this criterion is not the existence of the problem, but rather the individual's failure to abstain from using the substance despite having evidence of the difficulty it is causing.

Specifiers

Tolerance and withdrawal may be associated with a higher risk for immediate general medical problems and a higher relapse rate. Specifiers are provided to note their presence or absence:

With Physiological Dependence. This specifier should be used when Substance Dependence is accompanied by evidence of tolerance (Criterion 1) or withdrawal (Criterion 2).

Without Physiological Dependence. This specifier should be used when there is no evidence of tolerance (Criterion 1) or withdrawal (Criterion 2). In these individuals, Substance Dependence is characterized by a pattern of compulsive use (at least three items from Criteria 3–7).

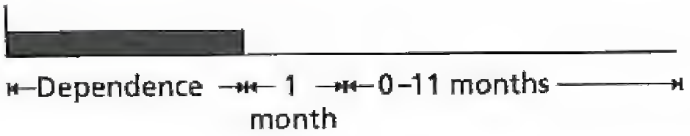
Course Specifiers

Six course specifiers are available for Substance Dependence. The four Remission specifiers can be applied only after none of the criteria for Substance Dependence or Substance Abuse have been present for at least 1 month. For those criteria that require recurrent problems, a remission specifier can apply only if no aspect of the criterion has been present (e.g., one incident of driving while intoxicated would suffice to disqualify the individual from being considered in remission). The definition of these four types of Remission is based on the interval of time that has elapsed since the cessation of Dependence (Early versus Sustained Remission) and whether there is continued presence of one or more of the items included in the criteria sets for Dependence or Abuse (Partial versus Full Remission). Because the first 12 months following Dependence is a time of particularly high risk for relapse, this period is designated Early Remission. After 12 months of Early Remission have passed without relapse to Dependence, the person enters into Sustained Remission. For both Early Remission and Sustained Remission, a further designation of Full is given if no criteria for Dependence or Abuse have been met during the period of remission; a designation of Partial is given if at least one of the criteria for Dependence or Abuse has been met, intermittently or continuously, during the period of remission. The differentiation of Sustained Full Remission from recovered (no current Substance Use Dis-

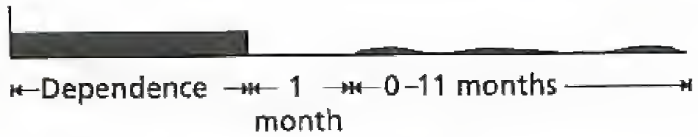
order) requires consideration of the length of time since the last period of disturbance, the total duration of the disturbance, and the need for continued evaluation. If, after a period of remission or recovery, the individual again becomes dependent, the application of the Early Remission specifier requires that there again be at least 1 month in which no criteria for Dependence or Abuse are met. Two additional specifiers have been provided: On Agonist Therapy and In a Controlled Environment. For an individual to qualify for Early Remission after cessation of agonist therapy or release from a controlled environment, there must be a 1-month period in which none of the criteria for Dependence or Abuse are met.

The following Remission specifiers can be applied only after no criteria for Dependence or Abuse have been met for at least 1 month. Note that these specifiers do not apply if the individual is on agonist therapy or in a controlled environment (see below).

Early Full Remission. This specifier is used if, for at least 1 month, but for less than 12 months, no criteria for Dependence or Abuse have been met.



Early Partial Remission. This specifier is used if, for at least 1 month, but less than 12 months, one or more criteria for Dependence or Abuse have been met (but the full criteria for Dependence have not been met).



Sustained Full Remission. This specifier is used if none of the criteria for Dependence or Abuse have been met at any time during a period of 12 months or longer.

Sustained Partial Remission. This specifier is used if full criteria for Dependence have not been met for a period of 12 months or longer; however, one or more criteria for Dependence or Abuse have been met.

The following specifiers apply if the individual is on agonist therapy or in a controlled environment:

On Agonist Therapy. This specifier is used if the individual is on a prescribed agonist medication such as methadone and no criteria for Dependence or Abuse have been met for that class of medication for at least the past month (except tolerance to, or withdrawal from, the agonist). This category also applies to those being treated for Dependence using a partial agonist or an agonist/antagonist.

In a Controlled Environment. This specifier is used if the individual is in an environment where access to alcohol and controlled substances is restricted, and no criteria for Dependence or Abuse have been met for at least the past month. Examples of these environments are closely supervised and substance-free jails, therapeutic communities, or locked hospital units.

Criteria for Substance Dependence

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

(1) tolerance, as defined by either of the following:
   (a) a need for markedly increased amounts of the substance to achieve intoxication or desired effect
   (b) markedly diminished effect with continued use of the same amount of the substance

(2) withdrawal, as manifested by either of the following:
   (a) the characteristic withdrawal syndrome for the substance (refer to Criteria A and B of the criteria sets for Withdrawal from the specific substances)
   (b) the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms

(3) the substance is often taken in larger amounts or over a longer period than was intended

(4) there is a persistent desire or unsuccessful efforts to cut down or control substance use

(5) a great deal of time is spent in activities necessary to obtain the substance (e.g., visiting multiple doctors or driving long distances), use the substance (e.g., chain-smoking), or recover from its effects

(6) important social, occupational, or recreational activities are given up or reduced because of substance use

(7) the substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., current cocaine use despite recognition of cocaine-induced depression, or continued drinking despite recognition that an ulcer was made worse by alcohol consumption)

Criteria for Substance Dependence *(continued)*

Specify if:

With Physiological Dependence: evidence of tolerance or withdrawal (i.e., either Item 1 or 2 is present)
Without Physiological Dependence: no evidence of tolerance or withdrawal (i.e., neither Item 1 nor 2 is present)

Course specifiers (see text for definitions):

Early Full Remission
Early Partial Remission
Sustained Full Remission
Sustained Partial Remission
On Agonist Therapy
In a Controlled Environment

Substance Abuse

Features

The essential feature of Substance Abuse is a maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substances. In order for an Abuse criterion to be met, the substance-related problem must have occurred repeatedly during the same 12-month period or been persistent. There may be repeated failure to fulfill major role obligations, repeated use in situations in which it is physically hazardous, multiple legal problems, and recurrent social and interpersonal problems (Criterion A). Unlike the criteria for Substance Dependence, the criteria for Substance Abuse do not include tolerance, withdrawal, or a pattern of compulsive use and instead include only the harmful consequences of repeated use. A diagnosis of Substance Abuse is preempted by the diagnosis of Substance Dependence if the individual's pattern of substance use has ever met the criteria for Dependence for that class of substances (Criterion B). Although a diagnosis of Substance Abuse is more likely in individuals who have only recently started taking the substance, some individuals continue to have substance-related adverse social consequences over a long period of time without developing evidence of Substance Dependence. The category of Substance Abuse does not apply to caffeine and nicotine. The term *abuse* should be applied only to a pattern of substance use that meets the criteria for this disorder; the term should not be used as a synonym for "use," "misuse," or "hazardous use."

The individual may repeatedly demonstrate intoxication or other substance-related symptoms when expected to fulfill major role obligations at work, school, or home (Criterion A1). There may be repeated absences or poor work performance related to recurrent hangovers. A student might have substance-related absences, suspensions, or expulsions from school. While intoxicated, the individual may neglect children or household duties. The person may repeatedly be intoxicated in situations that are

physically hazardous (e.g., while driving a car, operating machinery, or engaging in risky recreational behavior such as swimming or rock climbing) (Criterion A2). There may be recurrent substance-related legal problems (e.g., arrests for disorderly conduct, assault and battery, driving under the influence) (Criterion A3). The person may continue to use the substance despite a history of undesirable persistent or recurrent social or interpersonal consequences (e.g., marital difficulties or divorce, verbal or physical fights) (Criterion A4).

Criteria for Substance Abuse

A. A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:

   (1) recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; neglect of children or household)
   (2) recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use)
   (3) recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct)
   (4) continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights)

B. The symptoms have never met the criteria for Substance Dependence for this class of substance.

Substance-Induced Disorders

Substance Intoxication

Diagnostic Features

The essential feature of Substance Intoxication is the development of a reversible substance-specific syndrome due to the recent ingestion of (or exposure to) a substance (Criterion A). The clinically significant maladaptive behavioral or psychological changes associated with intoxication (e.g., belligerence, mood lability, cognitive impairment, impaired judgment, impaired social or occupational functioning) are due to the direct physiological effects of the substance on the central nervous system and develop during or shortly after use of the substance (Criterion B). The symptoms are not due to a general medical condition and are not better accounted for by another

mental disorder (Criterion C). Substance Intoxication is often associated with Substance Abuse or Dependence. This category does not apply to nicotine. Evidence for recent intake of the substance can be obtained from the history, physical examination (e.g., smell of alcohol on the breath), or toxicological analysis of body fluids (e.g., urine or blood).

The most common changes involve disturbances of perception, wakefulness, attention, thinking, judgment, psychomotor behavior, and interpersonal behavior. The specific clinical picture in Substance Intoxication varies dramatically among individuals and also depends on which substance is involved, the dose, the duration or chronicity of dosing, the person's tolerance for the substance, the period of time since the last dose, the expectations of the person as to the substance's effects, and the environment or setting in which the substance is taken. Short-term or "acute" intoxications may have different signs and symptoms from sustained or "chronic" intoxications. For example, moderate cocaine doses may initially produce gregariousness, but social withdrawal may develop if such doses are frequently repeated over days or weeks.

Different substances (sometimes even different substance classes) may produce identical symptoms. For example, Amphetamine and Cocaine Intoxication can both present with grandiosity and hyperactivity, accompanied by tachycardia, pupillary dilation, elevated blood pressure, and perspiration or chills. Also, alcohol and substances from the sedative, hypnotic, or anxiolytic class produce similar symptoms of intoxication.

When used in the physiological sense, the term *intoxication* is broader than Substance Intoxication as defined here. Many substances may produce physiological or psychological changes that are not necessarily maladaptive. For example, an individual with tachycardia from excessive caffeine use has a physiological intoxication, but if this is the only symptom in the absence of maladaptive behavior, the diagnosis of Caffeine Intoxication would not apply. The maladaptive nature of a substance-induced change in behavior depends on the social and environmental context. The maladaptive behavior generally places the individual at significant risk for adverse effects (e.g., accidents, general medical complications, disruption in social and family relationships, vocational or financial difficulties, legal problems). Signs and symptoms of intoxication may sometimes persist for hours or days beyond the time when the substance is detectable in body fluids. This may be due to continuing low concentrations of the substance in certain areas of the brain or to a "hit and run" effect in which the substance alters a physiological process, the recovery of which takes longer than the time for elimination of the substance. These longer-term effects of intoxication must be distinguished from withdrawal (i.e., symptoms initiated by a decline in blood or tissue concentrations of a substance).

Criteria for Substance Intoxication

A. The development of a reversible substance-specific syndrome due to recent ingestion of (or exposure to) a substance. **Note:** Different substances may produce similar or identical syndromes.

B. Clinically significant maladaptive behavioral or psychological changes that are due to the effect of the substance on the central nervous system (e.g., belligerence, mood lability, cognitive impairment, impaired judgment, impaired social or occupational functioning) and develop during or shortly after use of the substance.

C. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Substance Withdrawal

Diagnostic Features

The essential feature of Substance Withdrawal is the development of a substance-specific maladaptive behavioral change, with physiological and cognitive concomitants, that is due to the cessation of, or reduction in, heavy and prolonged substance use (Criterion A). The substance-specific syndrome causes clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion B). The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder (Criterion C). Withdrawal is usually, but not always, associated with Substance Dependence (see p. 192). Most (perhaps all) individuals with Withdrawal have a craving to readminister the substance to reduce the symptoms. The diagnosis of Withdrawal is recognized for the following groups of substances: alcohol; amphetamines and other related substances; cocaine; nicotine; opioids; and sedatives, hypnotics, or anxiolytics. The signs and symptoms of Withdrawal vary according to the substance used, with most symptoms being the opposite of those observed in Intoxication with the same substance. The dose and duration of use and other factors such as the presence or absence of additional illnesses also affect withdrawal symptoms. Withdrawal develops when doses are reduced or stopped, whereas signs and symptoms of Intoxication improve (gradually in some cases) after dosing stops.

Criteria for Substance Withdrawal

A. The development of a substance-specific syndrome due to the cessation of (or reduction in) substance use that has been heavy and prolonged.

B. The substance-specific syndrome causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

C. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Associated Features of Substance Dependence, Abuse, Intoxication, and Withdrawal

Assessment issues. The diagnosis of Substance Dependence requires obtaining a detailed history from the individual and, whenever possible, from additional sources of information (e.g., medical records; a spouse, relative, or close friend). In addition, physical examination findings and laboratory test results can be helpful.

Route of administration. The route of administration of a substance is an important factor in determining its effects (including the time course of developing Intoxication, the probability that its use will produce physiological changes associated with Withdrawal, and the likelihood that use will lead to Dependence or Abuse). Routes of administration that produce more rapid and efficient absorption into the bloodstream (e.g., intravenous, smoking, or "snorting") tend to result in a more intense intoxication and an increased likelihood of an escalating pattern of substance use leading to Dependence. These routes of administration quickly deliver a large amount of the substance to the brain and, thus, are associated with higher levels of substance consumption and an increased likelihood of toxic effects. For example, a person who uses intravenous amphetamine is more likely to rapidly consume large amounts of the substance and thereby risk an overdose than the person who only takes amphetamine orally.

Speed of onset within a class of substance. Rapidly acting substances are more likely than slower-acting substances to produce immediate intoxication and lead to Dependence or Abuse. For example, because diazepam and alprazolam both have a more rapid onset than phenobarbital, they may consequently be more likely to lead to Substance Dependence or Abuse.

Duration of effects. The duration of effects associated with a particular substance is also important in determining the time course of Intoxication and whether use of the substance will lead to Dependence or Abuse. Relatively short-acting substances (e.g., certain anxiolytics) tend to have a higher potential for the development of Dependence or Abuse than substances with similar effects that have a longer duration of action (e.g., phenobarbital). The half-life of the substance parallels aspects of With-

drawal: the longer the duration of action, the longer the time between cessation and the onset of withdrawal symptoms and the longer the Withdrawal is likely to last. For example, for heroin, the onset of acute withdrawal symptoms is more rapid but the withdrawal syndrome is less persistent than for methadone. In general, the longer the acute withdrawal period, the less intense the syndrome tends to be.

Use of multiple substances. Substance Dependence, Abuse, Intoxication, and Withdrawal often involve several substances used simultaneously or sequentially. For example, individuals with Cocaine Dependence frequently also use alcohol, anxiolytics, or opioids, often to counteract lingering cocaine-induced anxiety symptoms. Similarly, individuals with Opioid Dependence or Cannabis Dependence usually have several other Substance-Related Disorders, most often involving alcohol, anxiolytics, amphetamine, or cocaine. When criteria for more than one Substance-Related Disorder are met, the diagnosis of Polysubstance Dependence should not be used. It applies only to those situations in which the pattern of multiple substance use does not meet the criteria for Dependence or Abuse for any specific substance, but meets it for the group of substances taken as a whole. The situations in which a diagnosis of Polysubstance Dependence should be given are described on p. 293.

Associated laboratory findings. Laboratory analyses of blood and urine samples can help determine recent use of a substance. Blood concentrations offer additional information on the amount of substance still present in the body. It should be noted that a positive blood or urine test does not by itself indicate that the individual has a pattern of substance use that meets criteria for a Substance-Related Disorder and that a negative blood or urine test does not by itself rule out a diagnosis of a Substance-Related Disorder.

In the case of Intoxication, blood and urine tests can help to determine the relevant substance(s) involved. Specific confirmation of the suspected substance may require toxicological analysis, because various substances have similar Intoxication syndromes; individuals often take a number of different substances; and because substitution and contamination of street drugs are frequent, those who obtain substances illicitly often do not know the specific contents of what they have taken. Toxicological tests may also be helpful in differential diagnosis to determine the role of Substance Intoxication or Withdrawal in the etiology (or exacerbation) of symptoms of a variety of mental disorders (e.g., Mood Disorders, Psychotic Disorders). Furthermore, serial blood levels may help to differentiate Intoxication from Withdrawal.

The blood concentration of a substance may be a useful clue in determining whether the person has a high tolerance to a given group of substances (e.g., a person presenting with a blood alcohol level of over 150 mg/dL without signs of Alcohol Intoxication has a significant tolerance to alcohol and is likely to be a chronic user of either alcohol or a sedative, hypnotic, or anxiolytic). Another method for assessing tolerance is to determine the individual's response to an agonist medication. For example, a person who does not exhibit any signs of intoxication from a dose of pentobarbital of 200 mg or higher has a significant tolerance to sedatives, hypnotics, or anxiolytics and may need treatment to prevent the development of Withdrawal.

Laboratory tests can be useful in identifying Withdrawal in individuals with Substance Dependence. Evidence for cessation or reduction of dosing may be obtained

by history or by toxicological analysis of body fluids (e.g., urine or blood). Although many substances and their metabolites clear the urine within 48 hours of ingestion, certain metabolites may be present for a longer period in those who use the substance chronically. If the person presents with Withdrawal from an unknown substance, urine tests may help identify the substance from which the person is withdrawing and make it possible to initiate appropriate treatment. Urine tests may also be helpful in differentiating Withdrawal from other mental disorders, because withdrawal symptoms can mimic the symptoms of mental disorders unrelated to use of a substance. In cases in which Opioid Dependence cannot be clearly confirmed by history, the use of an antagonist (e.g., naloxone) to demonstrate whether withdrawal symptoms are induced may be informative.

Associated physical examination findings and general medical conditions. As presented in the sections specific to the 11 classes of substance, intoxication and withdrawal states are likely to include physical signs and symptoms that are often the first clue to a substance-related state. In general, intoxication with amphetamines or cocaine is accompanied by increases in blood pressure, respiratory rate, pulse, and body temperature. Intoxication with sedative, hypnotic, or anxiolytic substances or with opioid medication often involves the opposite pattern. Substance Dependence and Abuse are often associated with general medical conditions often related to the toxic effects of the substances on particular organ systems (e.g., cirrhosis in Alcohol Dependence) or the routes of administration (e.g., human immunodeficiency virus [HIV] infection from shared needles).

Associated mental disorders. Substance use is often a component of the presentation of symptoms of mental disorders. When the symptoms are judged to be a direct physiological consequence of a substance, a Substance-Induced Disorder is diagnosed (see p. 209). Substance-Related Disorders are also commonly comorbid with, and complicate the course and treatment of, many mental disorders (e.g., Conduct Disorder in adolescents; Antisocial and Borderline Personality Disorders, Schizophrenia, Bipolar Disorder).

Recording Procedures for Dependence, Abuse, Intoxication, and Withdrawal

For drugs of abuse. The clinician should use the code that applies to the class of substances, but record the name of the specific substance rather than the name of the class. For example, the clinician should record 292.0 Secobarbital Withdrawal (rather than Sedative, Hypnotic, or Anxiolytic Withdrawal) or 305.70 Methamphetamine Abuse (rather than Amphetamine Abuse). For substances that do not fit into any of the classes (e.g., amyl nitrite), the appropriate code for "Other Substance Dependence," "Other Substance Abuse," "Other Substance Intoxication," or "Other Substance Withdrawal" should be used and the specific substance indicated (e.g., 305.90 Amyl Nitrite Abuse). If the substance taken by the individual is unknown, the code for the class "Other (or Unknown)" should be used (e.g., 292.89 Unknown Substance Intoxication). For a particular substance, if criteria are met for more than one Substance-Related Disorder, all should be diagnosed (e.g., 292.0 Heroin Withdrawal; 304.00

Heroin Dependence). If there are symptoms or problems associated with a particular substance but criteria are not met for any of the substance-specific disorders, the Not Otherwise Specified category can be used (e.g., 292.9 Cannabis-Related Disorder Not Otherwise Specified). If multiple substances are used, all relevant Substance-Related Disorders should be diagnosed (e.g., 292.89 Mescaline Intoxication; 304.20 Cocaine Dependence). The situations in which a diagnosis of 304.80 Polysubstance Dependence should be given are described on p. 293.

For medications and toxins. For medications not covered above (as well as for toxins), the code for "Other Substance" should be used. The specific medication can be coded by also listing the appropriate E-code on Axis I (see Appendix G) (e.g., 292.89 Benztropine Intoxication; E941.1 Benztropine). E-codes should also be used for classes of substances listed above when they are taken as prescribed (e.g., opioids).

Specific Culture, Age, and Gender Features

There are wide cultural variations in attitudes toward substance consumption, patterns of substance use, accessibility of substances, physiological reactions to substances, and prevalence of Substance-Related Disorders. Some groups forbid use of alcohol, whereas in others the use of various substances for mood-altering effects is widely accepted. The evaluation of any individual's pattern of substance use must take these factors into account. Patterns of medication use and toxin exposure also vary widely within and between countries.

Individuals between ages 18 and 24 years have relatively high prevalence rates for the use of virtually every substance, including alcohol. For drugs of abuse, Intoxication is usually the initial Substance-Related Disorder and usually begins in the teens. Withdrawal can occur at any age as long as the relevant drug has been taken in high-enough doses over a long-enough period of time. Dependence can also occur at any age, but typically has its initial onset for most drugs of abuse in the 20s, 30s, and 40s. When a Substance-Related Disorder other than Intoxication begins in early adolescence, it is often associated with Conduct Disorder and failure to complete school. For drugs of abuse, Substance-Related Disorders are usually diagnosed more commonly in males than in females, but the sex ratios vary with class of substance.

Course

The course of Dependence, Abuse, Intoxication, and Withdrawal varies with the class of substance, route of administration, and other factors. The "Course" sections for the various classes of substances indicate the specific features characteristic of each. However, some generalizations across substances can be made.

Intoxication usually develops within minutes after a sufficiently large single dose and continues or intensifies with frequently repeated doses. Intoxication begins to abate as blood or tissue concentrations of the substance decline, but signs and symptoms may resolve slowly. The onset of Intoxication may be delayed with slowly absorbed substances or with those that must be metabolized to active compounds. Long-acting substances may produce prolonged intoxications.

Withdrawal develops with the decline of the substance in the central nervous sys-

tem. Early symptoms of Withdrawal usually develop a few hours after dosing stops for substances with short elimination half-lives (e.g., alcohol, lorazepam, or heroin), although withdrawal seizures may develop several weeks after termination of high doses of long-half-life anxiolytic substances. The more intense signs of Withdrawal usually end within a few days to a few weeks after the cessation of substance use, although some subtle physiological signs may be detectable for many weeks or even months as part of a protracted withdrawal syndrome. For example, impaired sleep can be seen for months after a person with Alcohol Dependence stops drinking.

A diagnosis of Substance Abuse is more likely in individuals who have begun using substances only recently. For many individuals, Substance Abuse with a particular class of substances evolves into Substance Dependence for the same class of substance. This is particularly true for those substances that have a high potential for the development of tolerance, withdrawal, and patterns of compulsive use such as cocaine or heroin. Some individuals have evidence of Substance Abuse that occurs over an extended period of time without ever developing Substance Dependence. This is more true for those substances that have a lower potential for the development of tolerance, withdrawal, and patterns of compulsive use. Once criteria for Substance Dependence are met, a subsequent diagnosis of Substance Abuse cannot be given for any substance in the same class. For a person with Substance Dependence in full remission, any relapses that meet criteria for Substance Abuse would be considered Dependence in partial remission (see course specifiers, p. 195).

The course of Substance Dependence is variable. Although relatively brief and self-limited periods of Dependence may occur (particularly during times of psychosocial stress), the course is usually chronic, lasting years, with periods of exacerbation and partial or full remission. There may be periods of heavy intake and severe problems, periods of total abstinence, and times of nonproblematic use of the substance, sometimes lasting for months. Substance Dependence is sometimes associated with spontaneous, long-term remissions. For example, follow-ups reveal that 20% (or more) of individuals with Alcohol Dependence become permanently abstinent, usually following a severe life stress (e.g., the threat or imposition of social or legal sanctions, discovery of a life-threatening medical complication). During the first 12 months after the onset of remission, the individual is particularly vulnerable to having a relapse. Many individuals underestimate their vulnerability to developing a pattern of Dependence. When in a period of remission, they incorrectly assure themselves that they will have no problem regulating substance use and may experiment with gradually less restrictive rules governing the use of the substance, only to experience a return to Dependence. The presence of co-occurring mental disorders (e.g., Antisocial Personality Disorder, untreated Major Depressive Disorder, Bipolar Disorder) often increases the risk of complications and a poor outcome.

Impairment and Complications

Although many individuals with substance-related problems have good functioning (e.g., in personal relationships, job performance, earning abilities), these disorders often cause marked impairment and severe complications. Individuals with Substance-Related Disorders frequently experience a deterioration in their general health. Malnutrition and other general medical conditions may result from improper diet and

inadequate personal hygiene. Intoxication or Withdrawal may be complicated by trauma related to impaired motor coordination or faulty judgment. The materials used to "cut" certain substances can produce toxic or allergic reactions. Using substances intranasally ("snorting") may cause erosion of the nasal septum. Stimulant use can result in sudden death from cardiac arrhythmias, myocardial infarction, a cerebrovascular accident, or respiratory arrest. The use of contaminated needles during intravenous administration of substances can cause human immunodeficiency virus (HIV) infection, hepatitis, tetanus, vasculitis, septicemia, subacute bacterial endocarditis, embolic phenomena, and malaria.

Substance use can be associated with violent or aggressive behavior, which may be manifested by fights or criminal activity, and can result in injury to the person using the substance or to others. Automobile, home, and industrial accidents are a major complication of Substance Intoxication and result in an appreciable rate of morbidity and mortality. Approximately one-half of all highway fatalities involve either a driver or a pedestrian who is intoxicated. In addition, perhaps 10% of individuals with Substance Dependence commit suicide, often in the context of a Substance-Induced Mood Disorder. Finally, because most, if not all, of the substances described in this section cross the placenta, they may have potential adverse effects on the developing fetus (e.g., fetal alcohol syndrome). When taken repeatedly in high doses by the mother, a number of substances (e.g., cocaine, opioids, alcohol, and sedatives, hypnotics, and anxiolytics) are capable of causing physiological dependence in the fetus and a withdrawal syndrome in the newborn.

Familial Pattern

Information about familial associations has been best studied for the Alcohol-Related Disorders (see the detailed discussion on p. 221). There is some evidence for genetically determined differences among individuals in the doses required to produce Alcohol Intoxication. Although Substance Abuse and Dependence appear to aggregate in families, some of this effect may be explained by the concurrent familial distribution of Antisocial Personality Disorder, which may predispose individuals to the development of Substance Abuse or Dependence. Furthermore, the children of individuals with Alcohol Dependence (but not Antisocial Personality Disorder) do not have a predisposition to developing Substance Dependence on all substances; they are only at higher risk for Alcohol Dependence.

Differential Diagnosis

Substance-Related Disorders are distinguished from **nonpathological substance use** (e.g., **"social" drinking**) and from the **use of medications for appropriate medical purposes** by the presence of a pattern of multiple symptoms occurring over an extended period of time (e.g., tolerance, withdrawal, compulsive use) or the presence of substance-related problems (e.g., medical complications, disruption in social and family relationships, vocational or financial difficulties, legal problems). Repeated episodes of **Substance Intoxication** are almost invariably prominent features of **Substance Abuse** or **Dependence**. However, one or more episodes of Intoxication alone are not sufficient for a diagnosis of either Substance Dependence or Abuse.

It may sometimes be difficult to distinguish between **Substance Intoxication** and **Substance Withdrawal.** If a symptom arises during the time of dosing and then gradually abates after dosing stops, it is likely to be part of Intoxication. If the symptom arises after stopping the substance, or reducing its use, it is likely to be part of Withdrawal. Individuals with Substance-Related Disorders often take more than one substance and may be intoxicated with one substance (e.g., heroin) while withdrawing from another (e.g., diazepam). This differential is further complicated by the fact that the signs and symptoms of Withdrawal from some substances (e.g., sedatives) may partially mimic Intoxication with others (e.g., amphetamines). Substance Intoxication is differentiated from **Substance Intoxication Delirium** (p. 143), **Substance-Induced Psychotic Disorder, With Onset During Intoxication** (p. 338), **Substance-Induced Mood Disorder, With Onset During Intoxication** (p. 405), **Substance-Induced Anxiety Disorder, With Onset During Intoxication** (p. 479), **Substance-Induced Sexual Dysfunction, With Onset During Intoxication** (p. 562), and **Substance-Induced Sleep Disorder, With Onset During Intoxication** (p. 655), by the fact that the symptoms in these latter disorders are in excess of those usually associated with Substance Intoxication and are severe enough to warrant independent clinical attention. Substance Withdrawal is distinguished from **Substance Withdrawal Delirium** (p. 143), **Substance-Induced Psychotic Disorder, With Onset During Withdrawal** (p. 338), **Substance-Induced Mood Disorder, With Onset During Withdrawal** (p. 405), **Substance-Induced Anxiety Disorder, With Onset During Withdrawal** (p. 479), and **Substance-Induced Sleep Disorder, With Onset During Withdrawal** (p. 655), by the fact that the symptoms in these latter disorders are in excess of those usually associated with Substance Withdrawal and are severe enough to warrant independent clinical attention.

The additional Substance-Induced Disorders described above present with symptoms that resemble **non-substance-induced** (i.e., **primary**) **mental disorders.** See p. 210 for a discussion of this important differential diagnosis.

An additional diagnosis of a Substance-Induced Disorder is usually not made when **symptoms of preexisting mental disorders are exacerbated by Substance Intoxication or Substance Withdrawal** (although a diagnosis of Substance Intoxication or Withdrawal might be appropriate). For example, Intoxication with some substances may exacerbate the mood swings in Bipolar Disorder, the auditory hallucinations and paranoid delusions in Schizophrenia, the intrusive thoughts and terrifying dreams in Posttraumatic Stress Disorder, and the anxiety symptoms in Panic Disorder, Generalized Anxiety Disorder, Social Phobia, and Agoraphobia. Intoxication or Withdrawal may also increase the risk of suicide, violence, and impulsive behavior in individuals with a preexisting Antisocial or Borderline Personality Disorder.

Many neurological (e.g., head injuries) or metabolic conditions produce symptoms that resemble, and are sometimes misattributed to, Intoxication or Withdrawal (e.g., fluctuating levels of consciousness, slurred speech, incoordination). The symptoms of infectious diseases may also resemble Withdrawal from some substances (e.g., viral gastroenteritis can be similar to Opioid Withdrawal). If the symptoms are judged to be a direct physiological consequence of a general medical condition, the appropriate **Mental Disorder Due to a General Medical Condition** should be diagnosed. If the symptoms are judged to be a direct physiological consequence of both substance use

and a general medical condition, both a Substance-Related Disorder and a Mental Disorder Due to a General Medical Condition may be diagnosed. If the clinician is unable to determine whether the presenting symptoms are substance induced, due to a general medical condition, or primary, the appropriate **Not Otherwise Specified Category** should be diagnosed (e.g., psychotic symptoms with indeterminate etiology would be diagnosed as Psychotic Disorder Not Otherwise Specified).

Substance-Induced Mental Disorders Included Elsewhere in the Manual

Substance-Induced Disorders cause a variety of symptoms that are characteristic of other mental disorders (see Table 1, p. 193). To facilitate differential diagnosis, the text and criteria for these other Substance-Induced Disorders are included in the sections of the manual with disorders with which they share phenomenology:

Substance-Induced Delirium (see p. 143) is included in the "Delirium, Dementia, and Amnestic and Other Cognitive Disorders" section.

Substance-Induced Persisting Dementia (see p. 168) is included in the "Delirium, Dementia, and Amnestic and Other Cognitive Disorders" section.

Substance-Induced Persisting Amnestic Disorder (see p. 177) is included in the "Delirium, Dementia, and Amnestic and Other Cognitive Disorders" section.

Substance-Induced Psychotic Disorder (see p. 338) is included in the "Schizophrenia and Other Psychotic Disorders" section. (In DSM-III-R these disorders were classified as "organic hallucinosis" and "organic delusional disorder.")

Substance-Induced Mood Disorder (see p. 405) is included in the "Mood Disorders" section.

Substance-Induced Anxiety Disorder (see p. 479) is included in the "Anxiety Disorders" section.

Substance-Induced Sexual Dysfunction (see p. 562) is included in the "Sexual and Gender Identity Disorders" section.

Substance-Induced Sleep Disorder (see p. 655) is included in the "Sleep Disorders" section.

In addition, **Hallucinogen Persisting Perception Disorder (Flashbacks)** (p. 253) is included under "Hallucinogen-Related Disorders" in this section.

In DSM-III-R, the Substance-Induced Disorders and the Mental Disorders Due to a General Medical Condition were called "organic" disorders and were listed together in a single section. This differentiation of "organic" mental disorders as a separate class implied that "nonorganic" or "functional" mental disorders were somehow unrelated to physical or biological factors or processes. DSM-IV eliminates the term *organic* and distinguishes those mental disorders that are substance induced from those that are due to a general medical condition and those that have no specified etiology. The term *primary mental disorder* is used as a shorthand to indicate those mental disorders that are not substance induced and that are not due to a general medical condition.

The context in which a Substance-Induced Disorder develops can have important management implications. Substance-Induced Disorders can develop in the context of Substance Intoxication or Substance Withdrawal, or they can persist long after the substance has been eliminated from the body (Substance-Induced Persisting Disor-

ders). Substance-induced presentations that develop in the context of Substance Intoxication can be indicated by using the specifier With Onset During Intoxication. Substance-induced presentations that develop in the context of Substance Withdrawal can be indicated by the specifier With Onset During Withdrawal. It should be noted that a diagnosis of a Substance-Induced Disorder, With Onset During Intoxication or Withdrawal, should be made instead of a diagnosis of Substance Intoxication or Substance Withdrawal only when the symptoms are in excess of those usually associated with the intoxication or withdrawal syndrome that is characteristic of the particular substance and when they are sufficiently severe to warrant independent clinical attention. For example, depression and fatigue that develop after stopping cocaine use following a prolonged period of daily intake are ordinarily diagnosed as Cocaine Withdrawal, since these symptoms are typical features of the withdrawal syndrome. Severe depression accompanied by a suicide attempt is usually diagnosed as Cocaine-Induced Mood Disorder, With Depressive Features, With Onset During Withdrawal, since a suicidal depression is in excess of what is usually seen in Cocaine Withdrawal and would warrant independent clinical attention.

Three Substance-Induced Persisting Disorders are included: Substance-Induced Persisting Dementia (see p. 168) and Substance-Induced Persisting Amnestic Disorder (see p. 177) in the "Delirium, Dementia, and Amnestic and Other Cognitive Disorders" section and Hallucinogen Persisting Perception Disorder under "Hallucinogen-Related Disorders" in this section (see p. 253). The essential feature of a Substance-Induced Persisting Disorder is prolonged or permanent persistence of substance-related symptoms that continue long after the usual course of Intoxication or Withdrawal has ended.

For drugs of abuse, a diagnosis of a Substance-Induced Mental Disorder requires that there be evidence from the history, physical examination, or laboratory findings of Substance Intoxication or Substance Withdrawal. In evaluating whether the symptoms of a mental disorder are the direct physiological effect of substance use, it is important to note the temporal relationship between the onset and offset of substance use and the onset and offset of the symptoms or the full syndrome. If the symptoms precede the onset of substance use or persist during extended periods of abstinence from the substance, it is likely that the symptoms are not substance induced. As a rule of thumb, symptoms that persist for more than 4 weeks after the cessation of acute Intoxication or Withdrawal should be considered to be manifestations of an independent non-substance-induced mental disorder or of a Substance-Induced Persisting Disorder. Clinical judgment is necessary in making this distinction, particularly because different substances have different characteristic durations of intoxication and withdrawal and varying relationships with symptoms of mental disorders. Because the withdrawal state for some substances can be relatively protracted, it is useful to carefully observe the course of symptoms for an extended period of time (e.g., 4 weeks or more) after the cessation of acute Intoxication or Withdrawal, making all possible efforts to maintain the individual's abstinence. This can be accomplished in various ways, including inpatient hospitalization or residential treatment, requiring frequent follow-up visits, recruiting friends and family members to help keep the person substance free, regularly evaluating urine or blood for the presence of substances, and, if alcohol is involved, routinely evaluating changes in state markers of heavy drinking such as gamma-glutamyltransferase (GGT).

Another consideration in differentiating a primary mental disorder from a Substance-Induced Disorder is the presence of features that are atypical of the primary disorder (e.g., atypical age at onset or course). For example, the onset of a Manic Episode after age 45 years may suggest a substance-induced etiology. In contrast, factors that suggest that the symptoms are better accounted for by a primary mental disorder include a history of prior episodes of the disturbance that were not substance induced. Finally, the presence or absence of the substance-specific physiological and behavioral features of Intoxication or Withdrawal should be considered. For example, the presence of paranoid delusions would not be surprising in the context of Amphetamine Intoxication, but would be unusual with Sedative Intoxication, increasing the likelihood that a primary Psychotic Disorder accounts for the symptoms. Furthermore, the dosage of the substance used should be taken into account. For example, the presence of paranoid delusions would be unusual after a single puff of marijuana, but might be compatible with high doses of hashish.

Substance-Induced Disorders can also occur as a side effect of a medication or from exposure to a toxin. Substance-Induced Disorders due to a prescribed treatment for a mental disorder or general medical condition must have their onset while the person is receiving the medication (or during withdrawal if the medication is associated with a withdrawal syndrome). Once the treatment is discontinued, the symptoms will usually remit within days but may persist for up to 4 weeks or so (depending on the half-life of the substance, the presence of a withdrawal syndrome, and individual variability). If symptoms persist, a primary mental disorder (not related to a medication) should be considered. Because individuals with general medical conditions often take medications for those conditions, the clinician must consider the possibility that the symptoms are caused by the physiological consequences of the general medical condition rather than the medication, in which case Mental Disorder Due to a General Medical Condition is diagnosed. The history may provide a basis for making this judgment, but a change in the treatment for the general medical condition (e.g., medication substitution or discontinuation) may be needed to determine empirically for that person whether or not the medication is the causative agent.

Recording Procedures for Substance-Induced Mental Disorders Included Elsewhere in the Manual

The name of the diagnosis begins with the specific substance (e.g., cocaine, diazepam, dexamethasone) that is presumed to be causing the symptoms. The diagnostic code is selected from the listing of classes of substances provided in the criteria sets for the particular Substance-Induced Disorder. For substances that do not fit into any of the classes (e.g., dexamethasone), the code for "Other Substance" should be used. In addition, for medications prescribed at therapeutic doses, the specific medication can be indicated by listing the appropriate E-code on Axis I (see Appendix G). The name of the disorder (e.g., Cocaine-Induced Psychotic Disorder; Diazepam-Induced Anxiety Disorder) is followed by the specification of the predominant symptom presentation and the context in which the symptoms developed (e.g., 292.11 Cocaine-Induced Psychotic Disorder, With Delusions, With Onset During Intoxication; 292.89 Diazepam-Induced Anxiety Disorder, With Onset During Withdrawal). When more than one substance is judged to play a significant role in the development of symptoms, each

should be listed separately. If a substance is judged to be the etiological factor, but the specific substance or class of substances is unknown, the class "Unknown Substance" should be used.

Alcohol-Related Disorders

In most cultures, alcohol is the most frequently used brain depressant and a cause of considerable morbidity and mortality. At some time in their lives, as many as 90% of adults in the United States have had some experience with alcohol, and a substantial number (60% of males and 30% of females) have had one or more alcohol-related adverse life events (e.g., driving after consuming too much alcohol, missing school or work due to a hangover). Fortunately, most individuals learn from these experiences and moderate their drinking, thus avoiding Alcohol Dependence or Abuse.

This section contains discussions specific to the Alcohol-Related Disorders. Texts and criteria sets have already been provided earlier for the generic aspects of Substance Dependence (p. 192) and Substance Abuse (p. 198) that apply across all substances. The application of those general criteria to Alcohol Dependence and Abuse is provided below. However, there are no additional unique criteria sets for Alcohol Dependence or Alcohol Abuse. Specific texts and criteria sets for Alcohol Intoxication and Alcohol Withdrawal are also provided below. The Alcohol-Induced Disorders (other than Alcohol Intoxication and Withdrawal) are described in the sections of the manual with disorders with which they share phenomenology (e.g., Alcohol-Induced Mood Disorder is included in the "Mood Disorders" section). Listed below are the Alcohol Use Disorders and the Alcohol-Induced Disorders.

Alcohol Use Disorders

303.90 **Alcohol Dependence** (see p. 213)
305.00 **Alcohol Abuse** (see p. 214)

Alcohol-Induced Disorders

303.00 **Alcohol Intoxication** (see p. 214)
291.81 **Alcohol Withdrawal** (see p. 215) *Specify if:* With Perceptual Disturbances
291.0 **Alcohol Intoxication Delirium** (see p. 143)
291.0 **Alcohol Withdrawal Delirium** (see p. 143)
291.2 **Alcohol-Induced Persisting Dementia** (see p. 168)
291.1 **Alcohol-Induced Persisting Amnestic Disorder** (see p. 177)
291.5 **Alcohol-Induced Psychotic Disorder, With Delusions** (see p. 338) *Specify if:* With Onset During Intoxication/With Onset During Withdrawal

291.3 **Alcohol-Induced Psychotic Disorder, With Hallucinations** (see p. 338) *Specify if:* With Onset During Intoxication/With Onset During Withdrawal

291.89 **Alcohol-Induced Mood Disorder** (see p. 405) *Specify if:* With Onset During Intoxication/With Onset During Withdrawal

291.89 **Alcohol-Induced Anxiety Disorder** (see p. 479) *Specify if:* With Onset During Intoxication/With Onset During Withdrawal

291.89 **Alcohol-Induced Sexual Dysfunction** (see p. 562) *Specify if:* With Onset During Intoxication

291.89 **Alcohol-Induced Sleep Disorder** (see p. 655) *Specify if:* With Onset During Intoxication/With Onset During Withdrawal

291.9 **Alcohol-Related Disorder Not Otherwise Specified** (see p. 223)

Alcohol Use Disorders

303.90 Alcohol Dependence

Refer, in addition, to the general text and criteria for Substance Dependence (see p. 192). Physiological dependence on alcohol is indicated by evidence of tolerance or symptoms of Withdrawal. Especially if associated with a history of withdrawal, physiological dependence is an indication of a more severe clinical course overall (i.e., earlier onset, higher levels of intake, more alcohol-related problems).

Alcohol Withdrawal (see p. 215) is characterized by withdrawal symptoms that develop 4–12 hours or so after the reduction of intake following prolonged, heavy, alcohol ingestion. Because Withdrawal from alcohol can be unpleasant and intense, individuals with Alcohol Dependence may continue to consume alcohol, despite adverse consequences, often to avoid or to relieve the symptoms of withdrawal. Some withdrawal symptoms (e.g., sleep problems) can persist at lower intensities for months. A substantial minority of individuals who have Alcohol Dependence never experience clinically relevant levels of Alcohol Withdrawal, and only about 5% of individuals with Alcohol Dependence ever experience severe complications of withdrawal (e.g., delirium, grand mal seizures). Once a pattern of compulsive use develops, individuals with Dependence may devote substantial periods of time to obtaining and consuming alcoholic beverages. These individuals often continue to use alcohol despite evidence of adverse psychological or physical consequences (e.g., depression, blackouts, liver disease, or other sequelae).

Specifiers

The following specifiers may be applied to a diagnosis of Alcohol Dependence (see p. 195 for more details):

With Physiological Dependence
Without Physiological Dependence

Early Full Remission
Early Partial Remission
Sustained Full Remission
Sustained Partial Remission
In a Controlled Environment

305.00 Alcohol Abuse

Refer, in addition, to the text and criteria for Substance Abuse (see p. 198). Alcohol Abuse requires fewer symptoms and, thus, may be less severe than Dependence and is only diagnosed once the absence of Dependence has been established. School and job performance may suffer either from the aftereffects of drinking or from actual intoxication on the job or at school; child care or household responsibilities may be neglected; and alcohol-related absences may occur from school or job. The person may use alcohol in physically hazardous circumstances (e.g., driving an automobile or operating machinery while intoxicated). Legal difficulties may arise because of alcohol use (e.g., arrests for intoxicated behavior or for driving under the influence). Finally, individuals with Alcohol Abuse may continue to consume alcohol despite the knowledge that continued consumption poses significant social or interpersonal problems for them (e.g., violent arguments with spouse while intoxicated, child abuse). When these problems are accompanied by evidence of tolerance, withdrawal, or compulsive behavior related to alcohol use, a diagnosis of Alcohol Dependence, rather than Alcohol Abuse, should be considered. However, since some symptoms of tolerance, withdrawal, or compulsive use can occur in individuals with Abuse but not Dependence, it is important to determine whether the full criteria for Dependence are met.

Alcohol-Induced Disorders

303.00 Alcohol Intoxication

Refer to the text and criteria for Substance Intoxication (see p. 199). The essential feature of Alcohol Intoxication is the presence of clinically significant maladaptive behavioral or psychological changes (e.g., inappropriate sexual or aggressive behavior, mood lability, impaired judgment, impaired social or occupational functioning) that develop during, or shortly after, the ingestion of alcohol (Criteria A and B). These changes are accompanied by evidence of slurred speech, incoordination, unsteady gait, nystagmus, impairment in attention or memory, or stupor or coma (Criterion C). The symptoms must not be due to a general medical condition and are not better accounted for by another mental disorder (Criterion D). The resulting picture is similar to what is observed during Benzodiazepine or Barbiturate Intoxication. The levels of

incoordination can interfere with driving abilities and with performing usual activities to the point of causing accidents. Evidence of alcohol use can be obtained by smelling alcohol on the individual's breath, eliciting a history from the individual or another observer, and, when needed, having the individual undertake breath, blood, or urine toxicology analyses.

Diagnostic criteria for 303.00 Alcohol Intoxication

A. Recent ingestion of alcohol.

B. Clinically significant maladaptive behavioral or psychological changes (e.g., inappropriate sexual or aggressive behavior, mood lability, impaired judgment, impaired social or occupational functioning) that developed during, or shortly after, alcohol ingestion.

C. One (or more) of the following signs, developing during, or shortly after, alcohol use:

(1) slurred speech
(2) incoordination
(3) unsteady gait
(4) nystagmus
(5) impairment in attention or memory
(6) stupor or coma

D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

291.81 Alcohol Withdrawal

Refer, in addition, to the text and criteria for Substance Withdrawal (see p. 201). The essential feature of Alcohol Withdrawal is the presence of a characteristic withdrawal syndrome that develops after the cessation of (or reduction in) heavy and prolonged alcohol use (Criteria A and B). The withdrawal syndrome includes two or more of the following symptoms: autonomic hyperactivity (e.g., sweating or pulse rate greater than 100); increased hand tremor; insomnia; psychomotor agitation; anxiety; nausea or vomiting; and, rarely, grand mal seizures or transient visual, tactile, or auditory hallucinations or illusions. When hallucinations or illusions are observed, the clinician can specify With Perceptual Disturbances (see below).

Withdrawal symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion C). The symptoms must not be due to a general medical condition and are not better accounted for by another mental disorder (e.g., Sedative, Hypnotic, or Anxiolytic Withdrawal or Generalized Anxiety Disorder) (Criterion D).

Symptoms can be relieved by administering alcohol or any other brain depressant. The withdrawal symptoms typically begin when blood concentrations of alcohol decline sharply (i.e., within 4–12 hours) after alcohol use has been stopped or reduced. Because of the short half-life of alcohol, symptoms of Alcohol Withdrawal usually peak in intensity during the second day of abstinence and are likely to improve mark-

edly by the fourth or fifth day. Following acute Withdrawal, however, symptoms of anxiety, insomnia, and autonomic dysfunction may persist for up to 3–6 months at lower levels of intensity.

Fewer than 10% of individuals who develop Alcohol Withdrawal will ever develop dramatic symptoms (e.g., severe autonomic hyperactivity, tremors, and Alcohol Withdrawal Delirium). Grand mal seizures occur in fewer than 3% of individuals. Alcohol Withdrawal Delirium (p. 143) includes disturbances in consciousness and cognition and visual, tactile, or auditory hallucinations ("delirium tremens," or "DTs"). When Alcohol Withdrawal Delirium develops, it is likely that a clinically relevant general medical condition may be present (e.g., liver failure, pneumonia, gastrointestinal bleeding, sequelae of head trauma, hypoglycemia, an electrolyte imbalance, or postoperative status).

Specifier

The following specifier may be applied to a diagnosis of Alcohol Withdrawal:

> **With Perceptual Disturbances.** This specifier may be noted in the rare instance when hallucinations with intact reality testing or auditory, visual, or tactile illusions occur in the absence of a delirium. *Intact reality testing* means that the person knows that the hallucinations are induced by the substance and do not represent external reality. When hallucinations occur in the absence of intact reality testing, a diagnosis of Substance-Induced Psychotic Disorder, With Hallucinations, should be considered.

Diagnostic criteria for 291.81 Alcohol Withdrawal

A. Cessation of (or reduction in) alcohol use that has been heavy and prolonged.

B. Two (or more) of the following, developing within several hours to a few days after Criterion A:

(1) autonomic hyperactivity (e.g., sweating or pulse rate greater than 100)
(2) increased hand tremor
(3) insomnia
(4) nausea or vomiting
(5) transient visual, tactile, or auditory hallucinations or illusions
(6) psychomotor agitation
(7) anxiety
(8) grand mal seizures

C. The symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Specify if:

With Perceptual Disturbances

Other Alcohol-Induced Disorders

The following Alcohol-Induced Disorders are described in the sections of the manual with disorders with which they share phenomenology: **Alcohol Intoxication Delirium** (p. 143), **Alcohol Withdrawal Delirium** (p. 143), **Alcohol-Induced Persisting Dementia** (p. 168), **Alcohol-Induced Persisting Amnestic Disorder** (p. 177), **Alcohol-Induced Psychotic Disorder** (p. 338), **Alcohol-Induced Mood Disorder** (p. 405), **Alcohol-Induced Anxiety Disorder** (p. 479), **Alcohol-Induced Sexual Dysfunction** (p. 562), and **Alcohol-Induced Sleep Disorder** (p. 655). These disorders are diagnosed instead of Alcohol Intoxication or Alcohol Withdrawal only when the symptoms are in excess of those usually associated with the Alcohol Intoxication or Withdrawal syndrome and when the symptoms are sufficiently severe to warrant independent clinical attention.

Additional Information on Alcohol-Related Disorders

Associated Features and Disorders

Associated descriptive features and mental disorders. Alcohol Dependence and Abuse are often associated with Dependence on, or Abuse of, other substances (e.g., cannabis; cocaine; heroin; amphetamines; the sedatives, hypnotics, and anxiolytics; and nicotine). Alcohol may be used to alleviate the unwanted effects of these other substances or to substitute for them when they are not available. Symptoms of depression, anxiety, and insomnia frequently accompany Alcohol Dependence and sometimes precede it. Alcohol Intoxication is sometimes associated with an amnesia for the events that occurred during the course of the intoxication ("blackouts"). This phenomenon may be related to the presence of a high blood alcohol level and, perhaps, to the rapidity with which this level is reached.

Alcohol-Related Disorders are associated with a significant increase in the risk of accidents, violence, and suicide. It is estimated that perhaps one in five intensive care unit admissions in some urban hospitals is related to alcohol and that 40% of people in the United States experience an alcohol-related accident at some time in their lives, with alcohol accounting for up to 55% of fatal driving events. Severe Alcohol Intoxication, especially in individuals with Antisocial Personality Disorder, is associated with the commission of criminal acts. For example, more than one-half of all murderers and their victims are believed to have been intoxicated with alcohol at the time of the murder. Severe Alcohol Intoxication also contributes to disinhibition and feelings of sadness and irritability, which contribute to suicide attempts and completed suicides. Alcohol-Related Disorders contribute to absenteeism from work, job-related accidents, and low employee productivity. Alcohol Abuse and Dependence, along with Abuse and Dependence of other substances, are prevalent among individuals across all levels of education and socioeconomic status. Rates of Alcohol-Related Disorders appear to be elevated in homeless individuals, perhaps reflecting a downward spiral in social and occupational functioning, although many people with Dependence or Abuse continue to maintain relationships with their families and function

within their jobs. Mood Disorders, Anxiety Disorders, Schizophrenia, and Antisocial Personality Disorder may be associated with Alcohol Dependence. It should be noted that some evidence suggests that at least a part of the reported association between depression and Alcohol Dependence may be attributable to comorbid depressive symptoms resulting from the acute effects of intoxication or withdrawal.

Associated laboratory findings. One sensitive laboratory indicator of heavy drinking is an elevation (>30 units) of gamma-glutamyltransferase (GGT). This finding may be the only laboratory abnormality. At least 70% of individuals with a high GGT level are persistent heavy drinkers (i.e., consuming eight or more drinks daily on a regular basis). A second test with comparable or even higher levels of sensitivity and specificity is carbohydrate deficient transferrin (CDT), with levels of 20 units or higher useful in identifying individuals who regularly consume eight or more drinks daily. Since both GGT and CDT levels return toward normal within days to weeks of stopping drinking, both state markers are useful in monitoring abstinence, especially when the clinician observes increases, rather than decreases, in these values over time. The combination of CDT and GGT may have even higher levels of sensitivity and specificity than either test used alone. Additional useful tests include the mean corpuscular volume (MCV), which may be elevated to high-normal values in individuals who drink heavily—a change that is due to the direct toxic effects of alcohol on erythropoiesis. Although the MCV can be used to help identify those who drink heavily, it is a poor method of monitoring abstinence because of the long half-life of red blood cells. Liver function tests (e.g., alanine aminotransferase [ALT] and alkaline phosphatase) can reveal liver injury that is a consequence of heavy drinking. Elevations of lipid levels in the blood (e.g., triglycerides and lipoprotein cholesterol) can be observed, resulting from decreases in gluconeogenesis associated with heavy drinking. High fat content in the blood also contributes to the development of fatty liver. High-normal levels of uric acid can occur with heavy drinking, but are relatively nonspecific. The most direct test available to measure alcohol consumption cross-sectionally is blood alcohol concentration, which can also be used to judge tolerance to alcohol. An individual with a concentration of 100 mg of ethanol per deciliter of blood who does not show signs of intoxication can be presumed to have acquired at least some degree of tolerance to alcohol. At 200 mg/dL, most nontolerant individuals demonstrate severe intoxication.

Associated physical examination findings and general medical conditions. Repeated intake of high doses of alcohol can affect nearly every organ system, especially the gastrointestinal tract, cardiovascular system, and the central and peripheral nervous systems. Gastrointestinal effects include gastritis, stomach or duodenal ulcers, and, in about 15% of those who use alcohol heavily, liver cirrhosis and pancreatitis. There is also an increased rate of cancer of the esophagus, stomach, and other parts of the gastrointestinal tract. One of the most common associated general medical conditions is low-grade hypertension. Cardiomyopathy and other myopathies are less common, but occur at an increased rate among those who drink very heavily. These factors, along with marked increases in levels of triglycerides and low-density lipoprotein cholesterol, contribute to an elevated risk of heart disease. Peripheral neuropathy may be evidenced by muscular weakness, paresthesias, and decreased

peripheral sensation. More persistent central nervous system effects include cognitive deficits, severe memory impairment, and degenerative changes in the cerebellum. These effects are related to the direct effects of alcohol or of trauma and to vitamin deficiencies (particularly of the B vitamins, including thiamine). One devastating central nervous system effect is the relatively rare Alcohol-Induced Persisting Amnestic Disorder (p. 177) (Wernicke-Korsakoff syndrome), in which the ability to encode new memory is severely impaired.

Many of the symptoms and physical findings associated with the Alcohol-Related Disorders are a consequence of the disease states noted above. Examples are the dyspepsia, nausea, and bloating that accompany gastritis and the hepatomegaly, esophageal varices, and hemorrhoids that accompany alcohol-induced changes in the liver. Other physical signs include tremor, unsteady gait, insomnia, and erectile dysfunction. Men with chronic Alcohol Dependence may exhibit decreased testicular size and feminizing effects associated with reduced testosterone levels. Repeated heavy drinking in women is associated with menstrual irregularities and, during pregnancy, with spontaneous abortion and fetal alcohol syndrome. Individuals with preexisting histories of epilepsy or severe head trauma are more likely to develop alcohol-related seizures. Alcohol Withdrawal may be associated with nausea, vomiting, gastritis, hematemesis, dry mouth, puffy blotchy complexion, and mild peripheral edema. Alcohol Intoxication may result in falls and accidents that may cause fractures, subdural hematomas, and other forms of brain trauma. Severe, repeated Alcohol Intoxication may also suppress immune mechanisms and predispose individuals to infections and increase the risk for cancers. Finally, unanticipated Alcohol Withdrawal in hospitalized patients for whom a diagnosis of Alcohol Dependence has been overlooked can add to the risks and costs of hospitalization and to time spent in the hospital.

Specific Culture, Age, and Gender Features

The cultural traditions surrounding the use of alcohol in family, religious, and social settings, especially during childhood, can affect both alcohol use patterns and the likelihood that alcohol problems will develop. Marked differences characterize the quantity, frequency, and patterning of alcohol consumption in the countries of the world. In most Asian cultures, the overall prevalence of Alcohol-Related Disorders may be relatively low, and the male-to-female ratio high. The low prevalence rates among Asians appear to relate to a deficiency, in perhaps 50% of Japanese, Chinese, and Korean individuals, of the form of aldehyde dehydrogenase that eliminates low levels of the first breakdown product of alcohol, acetaldehyde. When the estimated 10% of individuals who have a complete absence of the enzyme consume alcohol, they experience a flushed face and palpitations that can be so severe that many do not subsequently drink at all. Those 40% of the population with a relative deficiency of the enzyme experience less intense flushing but still have a significantly reduced risk of developing an Alcohol Use Disorder. In the United States, whites and African Americans have similar rates of Alcohol Abuse and Dependence. Latino males have somewhat higher rates, although prevalence is lower among Latino females than among females from other ethnic groups. Low educational level, unemployment, and lower socioeconomic status are associated with Alcohol-Related Disorders, although it is often difficult to separate cause from effect. Years of schooling may not be as important

in determining risk as completing the immediate educational goal (i.e., those who drop out of high school or college have particularly high rates of Alcohol-Related Disorders).

Among adolescents, Conduct Disorder and repeated antisocial behavior often co-occur with Alcohol Abuse or Dependence and with other Substance-Related Disorders. Age-related physical changes in elderly persons result in increased brain susceptibility to the depressant effects of alcohol, decreased rates of liver metabolism of a variety of substances, including alcohol, and decreased percentages of body water. These changes can cause older people to develop more severe intoxication and subsequent problems at lower levels of consumption. Alcohol-related problems in older people are also especially likely to be associated with other medical complications.

Females tend to develop higher blood alcohol concentrations than males at a given dose of alcohol per kilogram because of their lower percentage of body water, higher percentage of body fat, and the fact that they tend to metabolize alcohol more slowly (in part because of lower levels of alcohol dehydrogenase in the mucosal lining of the stomach). Because of these higher alcohol levels, they may be at greater risk than males for some of the health-related consequences of heavy alcohol intake (in particular, liver damage). Alcohol Abuse and Dependence are more common in males than in females, with a male-to-female ratio as high as 5:1, but this ratio varies substantially depending on the age group. In general, females start to drink several years later than males, but once Alcohol Abuse or Dependence develops in females, the disorder appears to progress somewhat more rapidly. However, the clinical course of Alcohol Dependence in males and females is more similar than different.

Prevalence

Alcohol use is highly prevalent in most Western countries, with the 1994 per capita consumption in adults in the United States estimated at 2.17 gallons of absolute alcohol. Among adults in the United States, two-thirds to 90% have ever consumed alcohol, depending on the survey and the methods used, with figures for men higher than those for women. A 1996 national survey indicated that about 70% of men and 60% of women consumed alcohol, figures that varied with age, with the highest prevalence (77%) for those between ages 26 and 34 years. Higher proportions of drinkers were reported in urban and coastal areas of the United States, and there were only modest differences across racial groups. It should be noted that because these surveys measured patterns of use rather than disorders, it is not known how many of those in the surveys who used alcohol had symptoms that met criteria for Dependence or Abuse.

Perhaps reflecting differences in research methodology and changes in the diagnostic criteria over the years, estimates of the prevalence of Alcohol Abuse and Dependence have varied markedly across different studies. However, when DSM-III-R and DSM-IV criteria are used, it appears that in the mid-1990s, the lifetime risk for Alcohol Dependence was approximately 15% in the general population. The overall rate of current Alcohol Dependence (measured as individuals whose pattern of alcohol use fulfilled the criteria over the prior year) probably approached 5%.

Course

The first episode of Alcohol Intoxication is likely to occur in the mid-teens, with the age at onset of Alcohol Dependence peaking in the 20s to mid-30s. The large majority of those who develop Alcohol-Related Disorders do so by their late 30s. The first evidence of Withdrawal is not likely to appear until after many other aspects of Dependence have developed. Alcohol Abuse and Dependence have a variable course that is frequently characterized by periods of remission and relapse. A decision to stop drinking, often in response to a crisis, is likely to be followed by weeks or more of abstinence, which is often followed by limited periods of controlled or nonproblematic drinking. However, once alcohol intake resumes, it is highly likely that consumption will rapidly escalate and that severe problems will once again develop. Clinicians often have the erroneous impression that Alcohol Dependence and Abuse are intractable disorders based on the fact that those who present for treatment typically have a history of many years of severe alcohol-related problems. However, these most severe cases represent only a small proportion of individuals with Alcohol Dependence or Abuse, and the typical person with an Alcohol Use Disorder has a much more promising prognosis. Follow-up studies of more highly functioning individuals show a higher than 65% 1-year abstinence rate following treatment. Even among less functional and homeless individuals with Alcohol Dependence who complete a treatment program, as many as 60% are abstinent at 3 months, and 45% at 1 year. Some individuals (perhaps 20% or more) with Alcohol Dependence achieve long-term sobriety even without active treatment.

During even mild Alcohol Intoxication, different symptoms are likely to be observed at different time points. Early in the drinking period, when blood alcohol levels are rising, symptoms often include talkativeness, a sensation of well-being, and a bright, expansive mood. Later, especially when blood alcohol levels are falling, the individual is likely to become progressively more depressed, withdrawn, and cognitively impaired. At very high blood alcohol levels (e.g., 200–300 mg/dL), a nontolerant individual is likely to fall asleep and enter a first stage of anesthesia. Higher blood alcohol levels (e.g., in excess of 300–400 mg/dL) can cause inhibition of respiration and pulse and even death in nontolerant individuals. The duration of Intoxication depends on how much alcohol was consumed over what period of time. In general, the body is able to metabolize approximately one drink per hour, so that the blood alcohol level generally decreases at a rate of 15–20 mg/dL per hour. Signs and symptoms of intoxication are likely to be more intense when the blood alcohol level is rising than when it is falling.

Familial Pattern

Alcohol Dependence often has a familial pattern, and it is estimated that 40%–60% of the variance of risk is explained by genetic influences. The risk for Alcohol Dependence is three to four times higher in close relatives of people with Alcohol Dependence. Higher risk is associated with a greater number of affected relatives, closer genetic relationships, and the severity of the alcohol-related problems in the affected relative. Most studies have found a significantly higher risk for Alcohol Dependence in the monozygotic twin than in the dizygotic twin of a person with Alcohol Depen-

dence. Adoption studies have revealed a three- to fourfold increase in risk for Alcohol Dependence in the children of individuals with Alcohol Dependence when these children were adopted away at birth and raised by adoptive parents who did not have this disorder. However, genetic factors explain only a part of the risk for Alcohol Dependence, with a significant part of the risk coming from environmental or interpersonal factors that may include cultural attitudes toward drinking and drunkenness, the availability of alcohol (including price), expectations of the effects of alcohol on mood and behavior, acquired personal experiences with alcohol, and stress.

Differential Diagnosis

For a general discussion of the differential diagnosis of Substance-Related Disorders, see p. 207. Alcohol-Induced Disorders may be characterized by symptoms (e.g., depressed mood) that resemble **primary mental disorders** (e.g., Major Depressive Disorder versus Alcohol-Induced Mood Disorder, With Depressive Features, With Onset During Intoxication). See p. 210 for a discussion of this differential diagnosis.

The incoordination and impaired judgment that are associated with Alcohol Intoxication can resemble the symptoms of **certain general medical conditions** (e.g., diabetic acidosis, cerebellar ataxias, and other neurological conditions such as multiple sclerosis). Similarly, the symptoms of Alcohol Withdrawal can also be mimicked by **certain general medical conditions** (e.g., hypoglycemia and diabetic ketoacidosis). **Essential tremor**, a disorder that frequently runs in families, may suggest the tremulousness associated with Alcohol Withdrawal.

Alcohol Intoxication (except for the smell of alcohol on the breath) closely resembles **Sedative, Hypnotic, or Anxiolytic Intoxication.** The presence of alcohol on the breath does not by itself exclude intoxications with other substances because multiple substances are not uncommonly used concurrently. Although intoxication at some time during their lives is likely to be a part of the history of most individuals who drink alcohol, when this phenomenon occurs regularly or causes impairment it is important to consider the possibility of a diagnosis of Alcohol Dependence or Alcohol Abuse. **Sedative, Hypnotic, or Anxiolytic Withdrawal** produces a syndrome very similar to that of Alcohol Withdrawal.

Alcohol Intoxication and Alcohol Withdrawal are distinguished from the **other Alcohol-Induced Disorders** (e.g., Alcohol-Induced Anxiety Disorder, With Onset During Withdrawal) because the symptoms in these latter disorders are in excess of those usually associated with Alcohol Intoxication or Alcohol Withdrawal and are severe enough to warrant independent clinical attention. **Alcohol idiosyncratic intoxication,** defined as marked behavioral change, usually aggressiveness, following the ingestion of a relatively small of amount of alcohol, was included in DSM-III-R. Because of limited support in the literature for the validity of this condition, it is no longer included as a separate diagnosis in DSM-IV. Such presentations would most likely be diagnosed as Alcohol Intoxication or Alcohol-Related Disorder Not Otherwise Specified.

291.9 Alcohol-Related Disorder Not Otherwise Specified

The Alcohol-Related Disorder Not Otherwise Specified category is for disorders associated with the use of alcohol that are not classifiable as Alcohol Dependence, Alcohol Abuse, Alcohol Intoxication, Alcohol Withdrawal, Alcohol Intoxication Delirium, Alcohol Withdrawal Delirium, Alcohol-Induced Persisting Dementia, Alcohol-Induced Persisting Amnestic Disorder, Alcohol-Induced Psychotic Disorder, Alcohol-Induced Mood Disorder, Alcohol-Induced Anxiety Disorder, Alcohol-Induced Sexual Dysfunction, or Alcohol-Induced Sleep Disorder.

Amphetamine (or Amphetamine-Like)–Related Disorders

The class of amphetamine and amphetamine-like substances includes all substances with a substituted-phenylethylamine structure, such as amphetamine, dextroamphetamine, and methamphetamine ("speed"). Also included are those substances that are structurally different but also have amphetamine-like action, such as methylphenidate or agents used as appetite suppressants ("diet pills"). These substances are usually taken orally or intravenously, although methamphetamine is also taken by the nasal route ("snorting"). A very pure form of methamphetamine is called "ice" because of the appearance of its crystals when observed under magnification. Because of its high purity and relatively low vaporization point, as is true for "crack," ice can be smoked to produce an immediate and powerful stimulant effect. In addition to the synthetic amphetamine-like compounds, there are naturally occurring, plant-derived stimulants such as khat that can produce Abuse or Dependence. Unlike cocaine, which is almost always purchased on the illegal market, amphetamines and other stimulants may be obtained by prescription for the treatment of obesity, Attention-Deficit/Hyperactivity Disorder, and Narcolepsy. Prescribed stimulants have sometimes been diverted into the illegal market, often in the context of weight-control programs. Most of the effects of amphetamines and amphetamine-like drugs are similar to those of cocaine. However, unlike cocaine, these substances do not have local anesthetic (i.e., membrane ion channel) activity; therefore, their risk for inducing certain general medical conditions (e.g., cardiac arrhythmias and seizures) may be lower. The psychoactive effects of most amphetamine-like substances last longer than those of cocaine, and the peripheral sympathomimetic effects may be more potent.

This section contains discussions that are specific to the Amphetamine-Related Disorders. Texts and criteria sets have already been provided for the generic aspects of Substance Dependence (p. 192) and Substance Abuse (p. 198) that apply across all substances. The application of these general criteria to Amphetamine Dependence and Abuse is provided below. However, there are no unique criteria sets for Amphetamine Dependence or Amphetamine Abuse. Specific texts and criteria sets for Amphetamine Intoxication and Amphetamine Withdrawal are also provided below. The Amphetamine-Induced Disorders (other than Amphetamine Intoxication and With-

drawal) are described in the sections of the manual with disorders with which they share phenomenology (e.g., Amphetamine-Induced Mood Disorder is included in the "Mood Disorders" section). Listed below are the Amphetamine Use Disorders and the Amphetamine-Induced Disorders.

Amphetamine Use Disorders

304.40 **Amphetamine Dependence** (see p. 224)
305.70 **Amphetamine Abuse** (see p. 225)

Amphetamine-Induced Disorders

292.89 **Amphetamine Intoxication** (see p. 226) *Specify if:* With Perceptual Disturbances
292.0 **Amphetamine Withdrawal** (see p. 227)
292.81 **Amphetamine Intoxication Delirium** (see p. 143)
292.11 **Amphetamine-Induced Psychotic Disorder, With Delusions** (see p. 338) *Specify if:* With Onset During Intoxication
292.12 **Amphetamine-Induced Psychotic Disorder, With Hallucinations** (see p. 338) *Specify if:* With Onset During Intoxication
292.84 **Amphetamine-Induced Mood Disorder** (see p. 405) *Specify if:* With Onset During Intoxication/With Onset During Withdrawal
292.89 **Amphetamine-Induced Anxiety Disorder** (see p. 479) *Specify if:* With Onset During Intoxication
292.89 **Amphetamine-Induced Sexual Dysfunction** (see p. 562) *Specify if:* With Onset During Intoxication
292.89 **Amphetamine-Induced Sleep Disorder** (see p. 655) *Specify if:* With Onset During Intoxication/With Onset During Withdrawal
292.9 **Amphetamine-Related Disorder Not Otherwise Specified** (see p. 231)

Amphetamine Use Disorders

304.40 Amphetamine Dependence

Refer, in addition, to the text and criteria for Substance Dependence (see p. 192). The patterns of use and course of Amphetamine Dependence are similar to those of Cocaine Dependence because both substances are potent central nervous system stimulants with similar psychoactive and sympathomimetic effects. However, amphetamines are longer acting than cocaine and thus are usually self-administered fewer times per day. As with Cocaine Dependence, usage may be chronic or episodic, with binges ("speed runs") punctuated by brief drug-free periods. Aggressive or violent behavior is associated with Amphetamine Dependence, especially when high doses are smoked, ingested, or administered intravenously. As with cocaine, intense

but temporary anxiety resembling Panic Disorder or Generalized Anxiety Disorder, as well as paranoid ideation and psychotic episodes that resemble Schizophrenia, Paranoid Type, are often seen, especially in association with high-dose use. Withdrawal states are often associated with temporary, but potentially intense, depressive symptoms that can resemble a Major Depressive Episode. Tolerance to amphetamines develops and often leads to substantial escalation of the dose. Conversely, some individuals with Amphetamine Dependence develop sensitization, which is characterized by enhanced augmentation of an effect following repeated exposure. In these cases, small doses may produce marked stimulant and other adverse mental and neurological effects.

Specifiers

The following specifiers may be applied to a diagnosis of Amphetamine Dependence (see p. 195 for more details):

With Physiological Dependence
Without Physiological Dependence

Early Full Remission
Early Partial Remission
Sustained Full Remission
Sustained Partial Remission
In a Controlled Environment

305.70 Amphetamine Abuse

Refer, in addition, to the text and criteria for Substance Abuse (see p. 198). Even individuals whose pattern of use does not meet criteria for Dependence can develop multiple problems with these substances. Legal difficulties typically arise as a result of behavior while intoxicated with amphetamines (especially aggressive behavior), as a consequence of obtaining the drug on the illegal market, or as a result of drug possession or use. Occasionally, individuals with Amphetamine Abuse will engage in illegal acts (e.g., manufacturing amphetamines, theft) to obtain the drug; however, this behavior is more common among those with Dependence. Individuals may continue to use the substance despite the knowledge that continued use results in arguments with family members while the individual is intoxicated or presents a negative example to children or other close family members. When these problems are accompanied by evidence of tolerance, withdrawal, or compulsive behavior, a diagnosis of Amphetamine Dependence rather than Abuse should be considered. However, since some symptoms of tolerance, withdrawal, or compulsive use can occur in individuals with Abuse but not Dependence, it is important to determine whether the full criteria for Dependence are met.

Amphetamine-Induced Disorders

292.89 Amphetamine Intoxication

Refer, in addition, to the text and criteria for Substance Intoxication (see p. 199). The essential feature of Amphetamine Intoxication is the presence of clinically significant maladaptive behavioral or psychological changes that develop during, or shortly after, use of amphetamine or a related substance (Criteria A and B). Amphetamine Intoxication generally begins with a "high" feeling, followed by the development of symptoms such as euphoria with enhanced vigor, gregariousness, hyperactivity, restlessness, hypervigilance, interpersonal sensitivity, talkativeness, anxiety, tension, alertness, grandiosity, stereotypical and repetitive behavior, anger, fighting, and impaired judgment. In the case of chronic intoxication, there may be affective blunting with fatigue or sadness and social withdrawal. These behavioral and psychological changes are accompanied by two or more of the following signs and symptoms: tachycardia or bradycardia; pupillary dilation; elevated or lowered blood pressure; perspiration or chills; nausea or vomiting; evidence of weight loss; psychomotor agitation or retardation; muscular weakness, respiratory depression, chest pain, or cardiac arrhythmias; and confusion, seizures, dyskinesias, dystonias, or coma (Criterion C). Amphetamine Intoxication, either acute or chronic, is often associated with impaired social or occupational functioning. The symptoms must not be due to a general medical condition and are not better accounted for by another mental disorder (Criterion D). The magnitude and manifestations of the behavioral and physiological changes depend on the dose used and individual characteristics of the person using the substance (e.g., tolerance, rate of absorption, chronicity of use). The changes associated with intoxication begin usually within minutes (and sometimes within seconds) after substance use but may take up to 1 hour, depending on the specific drug and method of delivery.

Specifier

The following specifier may be applied to a diagnosis of Amphetamine Intoxication:

> **With Perceptual Disturbances.** This specifier may be noted when hallucinations with intact reality testing or auditory, visual, or tactile illusions occur in the absence of a delirium. *Intact reality testing* means that the person knows that the hallucinations are induced by the substance and do not represent external reality. When hallucinations occur in the absence of intact reality testing, a diagnosis of Substance-Induced Psychotic Disorder, With Hallucinations, should be considered.

Diagnostic criteria for 292.89 Amphetamine Intoxication

A. Recent use of amphetamine or a related substance (e.g., methylphenidate).

B. Clinically significant maladaptive behavioral or psychological changes (e.g., euphoria or affective blunting; changes in sociability; hypervigilance; interpersonal sensitivity; anxiety, tension, or anger; stereotyped behaviors; impaired judgment; or impaired social or occupational functioning) that developed during, or shortly after, use of amphetamine or a related substance.

C. Two (or more) of the following, developing during, or shortly after, use of amphetamine or a related substance:

(1) tachycardia or bradycardia
(2) pupillary dilation
(3) elevated or lowered blood pressure
(4) perspiration or chills
(5) nausea or vomiting
(6) evidence of weight loss
(7) psychomotor agitation or retardation
(8) muscular weakness, respiratory depression, chest pain, or cardiac arrhythmias
(9) confusion, seizures, dyskinesias, dystonias, or coma

D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Specify if:

With Perceptual Disturbances

292.0 Amphetamine Withdrawal

Refer, in addition, to the text and criteria for Substance Withdrawal (see p. 201). The essential feature of Amphetamine Withdrawal is the presence of a characteristic withdrawal syndrome that develops within a few hours to several days after cessation of (or reduction in) heavy and prolonged amphetamine use (Criteria A and B). The symptoms of withdrawal are, in general, the opposite of those seen during intoxication. The withdrawal syndrome is characterized by the development of dysphoric mood and two or more of the following physiological changes: fatigue, vivid and unpleasant dreams, insomnia or hypersomnia, increased appetite, and psychomotor retardation or agitation. Anhedonia and drug craving can also be present but are not part of the diagnostic criteria. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion C). The symptoms must not be due to a general medical condition and are not better accounted for by another mental disorder.

Marked withdrawal symptoms ("crashing") often follow an episode of intense, high-dose use (a "speed run"). This "crash" is characterized by intense and unpleasant feelings of lassitude and depression, generally requiring several days of rest and

recuperation. Weight loss commonly occurs during heavy stimulant use, whereas a marked increase in appetite with rapid weight gain is often observed during withdrawal. Depressive symptoms may last several days to weeks and may be accompanied by suicidal ideation. The vast majority of individuals with Amphetamine Dependence have experienced a withdrawal syndrome at some point in their lives, and virtually all report tolerance.

Diagnostic criteria for 292.0 Amphetamine Withdrawal

A. Cessation of (or reduction in) amphetamine (or a related substance) use that has been heavy and prolonged.

B. Dysphoric mood and two (or more) of the following physiological changes, developing within a few hours to several days after Criterion A:

(1) fatigue
(2) vivid, unpleasant dreams
(3) insomnia or hypersomnia
(4) increased appetite
(5) psychomotor retardation or agitation

C. The symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Other Amphetamine-Induced Disorders

The following Amphetamine-Induced Disorders are described in the sections of the manual with disorders with which they share phenomenology: **Amphetamine Intoxication Delirium** (p. 143), **Amphetamine-Induced Psychotic Disorder** (p. 338), **Amphetamine-Induced Mood Disorder** (p. 405), **Amphetamine-Induced Anxiety Disorder** (p. 479), **Amphetamine-Induced Sexual Dysfunction** (p. 562), and **Amphetamine-Induced Sleep Disorder** (p. 655). These disorders are diagnosed instead of Amphetamine Intoxication or Amphetamine Withdrawal only when the symptoms are in excess of those usually associated with Amphetamine Intoxication or Withdrawal and when the symptoms are sufficiently severe to warrant independent clinical attention.

Additional Information on Amphetamine-Related Disorders

Associated Features and Disorders

Acute Amphetamine Intoxication is sometimes associated with rambling speech, headache, transient ideas of reference, and tinnitus. During intense Amphetamine

Intoxication, paranoid ideation, auditory hallucinations in a clear sensorium, and tactile hallucinations (e.g., formication or a feeling of bugs under the skin) may be experienced. Frequently, the person using the substance recognizes these symptoms as resulting from the stimulants. Extreme anger with threats or acting out of aggressive behavior may occur. Mood changes such as depression with suicidal ideation, irritability, anhedonia, emotional lability, or disturbances in attention and concentration are common, especially during withdrawal. Weight loss and other signs of malnutrition and impaired personal hygiene are often seen with sustained Amphetamine Dependence.

Amphetamine-Related Disorders and other stimulant-related disorders are often associated with Dependence on or Abuse of other substances, especially those with sedative properties (such as alcohol or benzodiazepines), which are usually taken to reduce the unpleasant, "jittery" feelings that result from stimulant drug effects.

The laboratory and physical examination findings and the mental disorders and general medical conditions that are associated with the Amphetamine-Related Disorders are generally similar to those that are associated with the Cocaine-Related Disorders (see p. 246). Urine tests for substances in this class usually remain positive for only 1–3 days, even after a "binge." Adverse pulmonary effects are seen less often than with cocaine because substances in this class are smoked fewer times per day. Seizures, HIV infection, malnutrition, gunshot or knife wounds, nosebleeds, and cardiovascular problems are often seen as presenting complaints in individuals with Amphetamine-Related Disorders. A history of childhood Conduct Disorder and adult Antisocial Personality Disorder may be associated with the later development of Amphetamine-Related Disorders.

Specific Culture, Age, and Gender Features

Amphetamine Dependence and Abuse are seen throughout all levels of society and are more common among persons between ages 18 and 30 years. Intravenous use is more common among persons from lower socioeconomic groups and has a male-to-female ratio of 3 or 4:1. The male-to-female ratio is more evenly divided among those with nonintravenous use.

Prevalence

The patterns of use of amphetamines in the general population differ between locales (e.g., with high rates in southern California) and have fluctuated greatly over the years. In the United States, general use patterns were thought to peak in the early 1980s, when more than 25% of adults reported that they had ever used one of these drugs.

Regarding more recent use, a 1996 national survey of drug use reported that around 5% of adults acknowledged ever having used "stimulant" drugs to get "high." Approximately 1% acknowledged having taken amphetamines in the prior year, and 0.4% acknowledged having taken amphetamines in the prior month. The peak prevalence of ever having used amphetamines was between ages 26 and 34 years (6%), while use in the last year was highest among 18- to 25-year-olds (2%). Some surveys have reported even higher patterns of use in some younger cohorts.

A 1997 survey of high school seniors reported that 16% had ever used amphetamine-like drugs, including 10% in the prior year. It should be noted that because these surveys measured patterns of use rather than disorders, it is not known how many of those in the surveys who used amphetamines had symptoms that met the criteria for Dependence or Abuse.

Rates of Amphetamine Dependence and Abuse are more difficult to document. A national epidemiological study conducted in the United States in the early 1990s reported a 1.5% lifetime prevalence of these Amphetamine Use Disorders, including 0.14% in the past 12 months.

Course

Some individuals who develop Abuse or Dependence on amphetamines or amphetamine-like substances begin use in an attempt to control their weight. Others become introduced to these substances through the illegal market. Dependence can occur rapidly when the substance is used intravenously or smoked. Oral administration usually results in a slower progression from use to Dependence. Amphetamine Dependence is associated with two patterns of administration: episodic use or daily (or almost daily) use. In the episodic pattern, substance use is separated by days of nonuse (e.g., intense use over a weekend or on one or more weekdays). These periods of intensive high-dose use (often called "speed runs" or "binges") are often associated with intravenous use. Runs tend to terminate only when drug supplies are depleted. Chronic daily use may involve high or low doses and may occur throughout the day or be restricted to only a few hours. In chronic daily use, there are generally no wide fluctuations in dose on successive days, but there is often an increase in dose over time. Chronic use of high doses often becomes unpleasant because of sensitization and the emergence of dysphoric and other negative drug effects. The few long-term data available indicate that there is a tendency for persons who have been dependent on amphetamines to decrease or stop use after 8–10 years. This appears to result from the development of adverse mental and physical effects that emerge in association with long-term dependence. Little or no data are available on the long-term course of Abuse.

Differential Diagnosis

For a general discussion of the differential diagnosis of Substance-Related Disorders, see p. 207. Amphetamine-Induced Disorders may be characterized by symptoms (e.g., delusions) that resemble **primary mental disorders** (e.g., Schizophreniform Disorder or Schizophrenia versus Amphetamine-Induced Psychotic Disorder, With Delusions, With Onset During Intoxication). See p. 210 for a discussion of this differential diagnosis.

Cocaine Intoxication, Hallucinogen Intoxication, and **Phencyclidine Intoxication** may cause a similar clinical picture and can sometimes be distinguished from Amphetamine Intoxication only by the presence of amphetamine metabolites in a urine specimen or amphetamine in plasma. Amphetamine Dependence and Abuse should be distinguished from **Cocaine, Phencyclidine,** and **Hallucinogen Dependence** and **Abuse**. Amphetamine Intoxication and Amphetamine Withdrawal are distinguished from the other **Amphetamine-Induced Disorders** (e.g., Amphetamine-Induced Anxiety Disorder, With Onset During Intoxication) because the symptoms in these latter

disorders are in excess of those usually associated with Amphetamine Intoxication or Amphetamine Withdrawal and are severe enough to warrant independent clinical attention.

292.9 Amphetamine-Related Disorder Not Otherwise Specified

The Amphetamine-Related Disorder Not Otherwise Specified category is for disorders associated with the use of amphetamine (or a related substance) that are not classifiable as Amphetamine Dependence, Amphetamine Abuse, Amphetamine Intoxication, Amphetamine Withdrawal, Amphetamine Intoxication Delirium, Amphetamine-Induced Psychotic Disorder, Amphetamine-Induced Mood Disorder, Amphetamine-Induced Anxiety Disorder, Amphetamine-Induced Sexual Dysfunction, or Amphetamine-Induced Sleep Disorder.

Caffeine-Related Disorders

Caffeine can be consumed from a number of different sources, including coffee (brewed = 100–140 mg/8 oz, instant = 65–100 mg/8 oz), tea (40–100 mg/8 oz), caffeinated soda (45 mg/12 oz), over-the-counter analgesics and cold remedies (25–50 mg/tablet), antidrowsiness pills (100–200 mg/tablet), and weight-loss aids (75–200 mg/tablet). Chocolate and cocoa have much lower levels of caffeine (e.g., 5 mg/chocolate bar). The consumption of caffeine is ubiquitous in much of the United States, with an average caffeine intake of approximately 200 mg/day, and up to 30% of Americans consuming 500 mg or more per day. Some individuals who drink large amounts of coffee display some aspects of dependence on caffeine and exhibit tolerance and perhaps withdrawal. However, the data are insufficient at this time to determine whether these symptoms are associated with clinically significant impairment that meets the criteria for Substance Dependence or Substance Abuse. In contrast, there is evidence that Caffeine Intoxication can be clinically significant, and specific text and criteria are provided below. Recent evidence also suggests the possible clinical relevance of caffeine withdrawal; a set of research criteria is included on p. 765. The Caffeine-Induced Disorders (other than Caffeine Intoxication) are described in the sections of the manual with disorders with which they share phenomenology (e.g., Caffeine-Induced Anxiety Disorder is included in the "Anxiety Disorders" section). Listed below are the Caffeine-Induced Disorders.

Caffeine-Induced Disorders

305.90 **Caffeine Intoxication** (see p. 232)

292.89 **Caffeine-Induced Anxiety Disorder** (see p. 479)
Specify if: With Onset During Intoxication

292.89 **Caffeine-Induced Sleep Disorder** (see p. 655)
Specify if: With Onset During Intoxication

292.9 **Caffeine-Related Disorder Not Otherwise Specified** (see p. 234)

Caffeine-Induced Disorders

305.90 Caffeine Intoxication

Refer, in addition, to the text and criteria for Substance Intoxication (see p. 199). The essential feature of Caffeine Intoxication is recent consumption of caffeine and five or more symptoms that develop during, or shortly after, caffeine use (Criteria A and B). Symptoms that can appear following the ingestion of as little as 100 mg of caffeine per day include restlessness, nervousness, excitement, insomnia, flushed face, diuresis, and gastrointestinal complaints. Symptoms that generally appear at levels of more than 1 g/day include muscle twitching, rambling flow of thoughts and speech, tachycardia or cardiac arrhythmia, periods of inexhaustibility, and psychomotor agitation. Caffeine Intoxication may not occur despite high caffeine intake because of the development of tolerance. The symptoms must cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion C). The symptoms must not be due to a general medical condition and are not better accounted for by another mental disorder (e.g., an Anxiety Disorder) (Criterion D).

Diagnostic criteria for 305.90 Caffeine Intoxication

A. Recent consumption of caffeine, usually in excess of 250 mg (e.g., more than 2–3 cups of brewed coffee).

B. Five (or more) of the following signs, developing during, or shortly after, caffeine use:

(1) restlessness
(2) nervousness
(3) excitement
(4) insomnia
(5) flushed face
(6) diuresis
(7) gastrointestinal disturbance
(8) muscle twitching
(9) rambling flow of thought and speech
(10) tachycardia or cardiac arrhythmia
(11) periods of inexhaustibility
(12) psychomotor agitation

C. The symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder (e.g., an Anxiety Disorder).

Other Caffeine-Induced Disorders

The following Caffeine-Induced Disorders are described in other sections of the manual with disorders with which they share phenomenology: **Caffeine-Induced Anxiety Disorder** (p. 479) and **Caffeine-Induced Sleep Disorder** (p. 655). These disorders are diagnosed instead of Caffeine Intoxication only when the symptoms are in excess of those usually associated with Caffeine Intoxication and when the symptoms are sufficiently severe to warrant independent clinical attention.

Additional Information on Caffeine-Related Disorders

Associated Features and Disorders

Mild sensory disturbances (e.g., ringing in the ears and flashes of light) have been reported at higher doses. Although large doses of caffeine can increase heart rate, smaller doses can slow the pulse. Whether excess caffeine intake can cause headaches is unclear. On physical examination, agitation, restlessness, sweating, tachycardia, flushed face, and increased bowel motility may be seen. Typical patterns of caffeine intake have not been consistently associated with other medical problems. However, heavy use is associated with the development or exacerbation of anxiety and somatic symptoms such as cardiac arrhythmias and gastrointestinal pain or diarrhea. With acute doses exceeding 10 g of caffeine, grand mal seizures and respiratory failure may result in death. Excessive caffeine use is associated with Mood, Eating, Psychotic, Sleep, and Substance-Related Disorders, whereas individuals with Anxiety Disorders are likely to avoid this substance.

Specific Culture, Age, and Gender Features

Caffeine use and the sources from which caffeine is consumed vary widely across cultures. The average caffeine intake in most of the developing world is less than 50 mg/day, compared to as much as 400 mg/day or more in Sweden, the United Kingdom, and other European nations. Caffeine consumption increases during the 20s and often decreases after age 65 years. Intake is greater in males than in females. With advancing age, people are likely to demonstrate increasingly intense reactions to caffeine, with greater complaints of interference with sleep or feelings of hyperarousal.

Prevalence

The pattern of caffeine use fluctuates during life, with 80%–85% of adults consuming caffeine in any given year. Among people who consume caffeine, 85% or more use a caffeine-containing beverage at least once a week, imbibing an average of almost 200 mg/day. Caffeine intake is probably elevated among individuals who smoke, and perhaps among those who use alcohol and other substances. The prevalence of Caffeine-Related Disorders is unknown.

Course

Caffeine intake usually begins in the mid-teens, with increasing levels of consumption through the 20s into the 30s, when use levels off and perhaps begins to fall. Among the approximately 40% of individuals who have stopped the intake of some form of caffeine, most report that they changed their pattern in response to its side effects or health concerns. The latter include cardiac arrhythmias, other heart problems, high blood pressure, fibrocystic disease of the breast, insomnia, or anxiety. Because tolerance to the behavioral effects of caffeine does occur, Caffeine Intoxication is often seen in those who use caffeine less frequently or in those who have recently increased their caffeine intake by a substantial amount.

Differential Diagnosis

For a general discussion of the differential diagnosis of Substance-Related Disorders, see p. 207. Caffeine-Induced Disorders may be characterized by symptoms (e.g., Panic Attacks) that resemble **primary mental disorders** (e.g., Panic Disorder versus Caffeine-Induced Anxiety Disorder, With Panic Attacks, With Onset During Intoxication). See p. 210 for a discussion of this differential diagnosis.

To meet criteria for Caffeine Intoxication, the symptoms must not be due to a **general medical condition** or **another mental disorder**, such as an **Anxiety Disorder**, that could better explain them. **Manic Episodes, Panic Disorder, Generalized Anxiety Disorder, Amphetamine Intoxication, Sedative, Hypnotic, or Anxiolytic Withdrawal** or **Nicotine Withdrawal, Sleep Disorders**, and **medication-induced side effects** (e.g., akathisia) can cause a clinical picture that is similar to that of Caffeine Intoxication. The temporal relationship of the symptoms to increased caffeine use or to abstinence from caffeine helps to establish the diagnosis. Caffeine Intoxication is differentiated from **Caffeine-Induced Anxiety Disorder, With Onset During Intoxication** (p. 479), and from **Caffeine-Induced Sleep Disorder, With Onset During Intoxication** (p. 655), by the fact that the symptoms in these latter disorders are in excess of those usually associated with Caffeine Intoxication and are severe enough to warrant independent clinical attention.

292.9 Caffeine-Related Disorder Not Otherwise Specified

The Caffeine-Related Disorder Not Otherwise Specified category is for disorders associated with the use of caffeine that are not classifiable as Caffeine Intoxication, Caffeine-Induced Anxiety Disorder, or Caffeine-Induced Sleep Disorder. An example is caffeine withdrawal (see p. 764 for suggested research criteria).

Cannabis-Related Disorders

This section includes problems that are associated with substances that are derived from the cannabis plant (cannabinoids) and chemically similar synthetic compounds.

When the upper leaves, tops, and stems of the plant are cut, dried, and rolled into cigarettes, the product is usually called marijuana or bhang. Hashish is the dried, resinous exudate that seeps from the tops and undersides of cannabis leaves; hashish oil is a concentrated distillate of hashish. In recent years, another high-potency form of cannabis, sensimilla, has been produced in Asia, Hawaii, and California. Cannabinoids are usually smoked, but they may be taken orally, usually mixed with tea or food. The cannabinoid that has been identified as primarily responsible for the psychoactive effects of cannabis is delta-9-tetrahydrocannabinol (also known as THC, or delta-9-THC), a substance that is rarely available in a pure form. The cannabinoids have diverse effects in the brain, prominent among which are actions on CB1 and CB2 cannabinoid receptors that are found throughout the central nervous system. Endogenous ligands for these receptors, anandamide and *N*-palmitoethanolamide, behave essentially like neurotransmitters. The THC content of the marijuana that is generally available varies greatly. The THC content of illicit marijuana has increased significantly since the late 1960s from an average of approximately 1%–5% to as much as 10%–15%. Synthetic delta-9-THC has been used for certain general medical conditions (e.g., for nausea and vomiting caused by chemotherapy, for anorexia and weight loss in individuals with acquired immunodeficiency syndrome [AIDS]).

This section contains discussions specific to the Cannabis-Related Disorders. Texts and criteria sets have already been provided to define the generic aspects of Substance Dependence (p. 192) and Substance Abuse (p. 198) that apply across all substances. The application of these general criteria to Cannabis Dependence and Abuse is provided below. However, there are no unique criteria sets for Cannabis Dependence or Cannabis Abuse. A specific text and criteria set for Cannabis Intoxication is also provided below. Symptoms of possible cannabis withdrawal (e.g., irritable or anxious mood accompanied by physiological changes such as tremor, perspiration, nausea, change in appetite, and sleep disturbances) have been described in association with the use of very high doses, but their clinical significance is uncertain. For these reasons, the diagnosis of cannabis withdrawal is not included in this manual. The Cannabis-Induced Disorders (other than Cannabis Intoxication) are described in the sections of the manual with disorders with which they share phenomenology (e.g., Cannabis-Induced Mood Disorder is included in the "Mood Disorders" section). Listed below are the Cannabis Use Disorders and the Cannabis-Induced Disorders.

Cannabis Use Disorders

304.30 **Cannabis Dependence** (see p. 236)
305.20 **Cannabis Abuse** (see p. 236)

Cannabis-Induced Disorders

292.89 **Cannabis Intoxication** (see p. 237) *Specify if:* With Perceptual Disturbances
292.81 **Cannabis Intoxication Delirium** (see p. 143)
292.11 **Cannabis-Induced Psychotic Disorder, With Delusions** (see p. 338) *Specify if:* With Onset During Intoxication

292.12 **Cannabis-Induced Psychotic Disorder, With Hallucinations** (see p. 338) *Specify if:* With Onset During Intoxication

292.89 **Cannabis-Induced Anxiety Disorder** (see p. 479) *Specify if:* With Onset During Intoxication

292.9 **Cannabis-Related Disorder Not Otherwise Specified** (see p. 241)

Cannabis Use Disorders

304.30 Cannabis Dependence

Refer, in addition, to the text and criteria for Substance Dependence (see p. 192). Individuals with Cannabis Dependence have compulsive use and associated problems. Tolerance to most of the effects of cannabis has been reported in individuals who use cannabis chronically. There have also been some reports of withdrawal symptoms, but their clinical significance is uncertain. There is some evidence that a majority of chronic users of cannabinoids report histories of tolerance or withdrawal and that these individuals evidence more severe drug-related problems overall. Individuals with Cannabis Dependence may use very potent cannabis throughout the day over a period of months or years, and they may spend several hours a day acquiring and using the substance. This often interferes with family, school, work, or recreational activities. Individuals with Cannabis Dependence may also persist in their use despite knowledge of physical problems (e.g., chronic cough related to smoking) or psychological problems (e.g., excessive sedation and a decrease in goal-oriented activities resulting from repeated use of high doses).

Specifiers

The following specifiers may be applied to a diagnosis of Cannabis Dependence (see p. 195 for more details):

With Physiological Dependence
Without Physiological Dependence

Early Full Remission
Early Partial Remission
Sustained Full Remission
Sustained Partial Remission
In a Controlled Environment

305.20 Cannabis Abuse

Refer, in addition, to the text and criteria for Substance Abuse (see p. 198). Periodic cannabis use and intoxication can interfere with performance at work or school and may be physically hazardous in situations such as driving a car. Legal problems may occur as a consequence of arrests for cannabis possession. There may be arguments with spouses or parents over the possession of cannabis in the home or its use in the presence of children. When psychological or physical problems are associated with

cannabis in the context of compulsive use, a diagnosis of Cannabis Dependence, rather than Cannabis Abuse, should be considered.

Cannabis-Induced Disorders

292.89 Cannabis Intoxication

Refer, in addition, to the text and criteria for Substance Intoxication (see p. 199). The essential feature of Cannabis Intoxication is the presence of clinically significant maladaptive behavioral or psychological changes that develop during, or shortly after, cannabis use (Criteria A and B). Intoxication typically begins with a "high" feeling followed by symptoms that include euphoria with inappropriate laughter and grandiosity, sedation, lethargy, impairment in short-term memory, difficulty carrying out complex mental processes, impaired judgment, distorted sensory perceptions, impaired motor performance, and the sensation that time is passing slowly. Occasionally, anxiety (which can be severe), dysphoria, or social withdrawal occurs. These psychoactive effects are accompanied by two or more of the following signs, developing within 2 hours of cannabis use: conjunctival injection, increased appetite, dry mouth, and tachycardia (Criterion C). The symptoms must not be due to a general medical condition and are not better accounted for by another mental disorder (Criterion D).

Intoxication develops within minutes if the cannabis is smoked, but may take a few hours to develop if ingested orally. The effects usually last 3–4 hours, the duration being somewhat longer when the substance is ingested orally. The magnitude of the behavioral and physiological changes depends on the dose, the method of administration, and the individual characteristics of the person using the substance, such as rate of absorption, tolerance, and sensitivity to the effects of the substance. Because most cannabinoids, including delta-9-THC, are fat soluble, the effects of cannabis or hashish may occasionally persist or reoccur for 12–24 hours due to a slow release of psychoactive substances from fatty tissue or to enterohepatic circulation.

Specifier

The following specifier may be applied to a diagnosis of Cannabis Intoxication:

> **With Perceptual Disturbances.** This specifier may be noted when hallucinations with intact reality testing or auditory, visual, or tactile illusions occur in the absence of a delirium. *Intact reality testing* means that the person knows that the hallucinations are induced by the substance and do not represent external reality. When hallucinations occur in the absence of intact reality testing, a diagnosis of Substance-Induced Psychotic Disorder, With Hallucinations, should be considered.

Diagnostic criteria for 292.89 Cannabis Intoxication

A. Recent use of cannabis.

B. Clinically significant maladaptive behavioral or psychological changes (e.g., impaired motor coordination, euphoria, anxiety, sensation of slowed time, impaired judgment, social withdrawal) that developed during, or shortly after, cannabis use.

C. Two (or more) of the following signs, developing within 2 hours of cannabis use:

(1) conjunctival injection
(2) increased appetite
(3) dry mouth
(4) tachycardia

D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Specify if:

With Perceptual Disturbances

Other Cannabis-Induced Disorders

The following Cannabis-Induced Disorders are described in other sections of the manual with disorders with which they share phenomenology: **Cannabis Intoxication Delirium** (p. 143), **Cannabis-Induced Psychotic Disorder** (p. 338), and **Cannabis-Induced Anxiety Disorder** (p. 479). These disorders are diagnosed instead of Cannabis Intoxication only when the symptoms are in excess of those usually associated with Cannabis Intoxication and when the symptoms are sufficiently severe to warrant independent clinical attention.

Additional Information on Cannabis-Related Disorders

Associated Features and Disorders

Associated descriptive features and mental disorders. Cannabis is often used with other substances, especially nicotine, alcohol, and cocaine. Cannabis (especially marijuana) may be mixed and smoked with opioids, phencyclidine (PCP), or hallucinogenic drugs. Individuals who regularly use cannabis often report both physical and mental lethargy and anhedonia. Mild forms of depression, anxiety, or irritability are seen in about one-third of individuals who regularly use cannabis (daily or almost daily). When taken in high doses, cannabinoids have psychoactive effects that can be similar to those of hallucinogens (e.g., lysergic acid diethylamide [LSD]), and individuals who use cannabinoids can experience adverse mental effects that resemble hallucinogen-induced "bad trips." These range from mild to moderate levels of anxiety

(e.g., concern that the police will discover the substance use) to severe anxiety reactions resembling Panic Attacks. There may also be paranoid ideation ranging from suspiciousness to frank delusions and hallucinations. Episodes of depersonalization and derealization have also been reported. Fatal traffic accidents have been found to occur more often in individuals who test positive for cannabinoids than in the general population. However, the significance of these findings is unclear because alcohol and other substances are often also present.

Associated laboratory findings. Urine tests generally identify cannabinoid metabolites. Because these substances are fat soluble, persist in bodily fluids for extended periods of time, and are excreted slowly, routine urine tests for cannabinoids in individuals who use cannabis casually can be positive for 7–10 days; urine of individuals with heavy use of cannabis may test positive for 2–4 weeks. A positive urine test is only consistent with past use; it does not establish Intoxication, Dependence, or Abuse. Biological alterations include temporary (and probably dose-related) suppression of immunological function and suppressed secretion of testosterone and luteinizing hormone (LH), although the clinical significance of these alterations is unclear. Acute cannabinoid use also causes diffuse slowing of background activity on EEG and rapid eye movement (REM) suppression.

Associated physical examination findings and general medical conditions. Cannabis smoke is highly irritating to the nasopharynx and bronchial lining and thus increases the risk for chronic cough and other signs and symptoms of nasopharyngeal pathology. Chronic cannabis use is sometimes associated with weight gain, probably resulting from overeating and reduced physical activity. Sinusitis, pharyngitis, bronchitis with persistent cough, emphysema, and pulmonary dysplasia may occur with chronic, heavy use. Marijuana smoke contains even larger amounts of known carcinogens than tobacco.

Specific Culture, Age, and Gender Features

Cannabis is probably the world's most commonly used illicit substance. It has been taken since ancient times for its psychoactive effects and as a remedy for a wide range of medical conditions. It is among the first drugs of experimentation (often in the teens) for all cultural groups in the United States. As with most other illicit drugs, Cannabis Use Disorders appear more often in males, and prevalence is most common in persons between ages 18 and 30 years.

Prevalence

Cannabinoids, especially cannabis, are also the most widely used illicit psychoactive substances in the United States. Although the lifetime prevalence figures slowly decreased in the 1980s, modest increases were reported between 1991 and 1997, especially among youth. A 1996 national survey of drug use noted that 32% of the U.S. population reported ever having used a cannabinoid. Almost 1 in 11 had used it in the prior year, and around 5% had used it in the past month. The age span with the highest lifetime prevalence was 26 to 34 years (50%), but use in the last year (24%) and

last month (13%) was most common in 18- to 25-year-olds. Among those who used in the prior year, 5% had taken a cannabinoid at least 12 times, and 3% had taken one on more than 50 days. Regarding use of cannabis in adolescents and young adults, a 1995 survey found that 42% of high school seniors had ever used a cannabinoid, including 35% in the prior year. Because the surveys assessed patterns of use rather than disorders, it is not known how many of those who used marijuana had symptoms that met criteria for Dependence or Abuse.

A 1992 national survey conducted in the United States reported lifetime rates of Cannabis Abuse or Dependence of almost 5%, including 1.2% in the prior year.

Course

Cannabis Dependence and Abuse usually develop over an extended period of time, although the progression might be more rapid in young people with pervasive conduct problems. Most people who become dependent typically establish a pattern of chronic use that gradually increases in both frequency and amount. With chronic heavy use, there is sometimes a diminution or loss of the pleasurable effects of the substance. Although there may also be a corresponding increase in dysphoric effects, these are not seen as frequently as in chronic use of other substances such as alcohol, cocaine, or amphetamines. A history of Conduct Disorder in childhood or adolescence and Antisocial Personality Disorder are risk factors for the development of many Substance-Related Disorders, including Cannabis-Related Disorders. Few data are available on the long-term course of Cannabis Dependence or Abuse. As with alcohol, caffeine, and nicotine, cannabinoid use appears early in the course of substance use in many people who later go on to develop Dependence on other substances—an observation that has led to speculation that cannabis might be a "gateway drug." However, the social, psychological, and neurochemical bases of this possible progression are not well understood, and it is not clear that marijuana actually causes individuals to go on to use additional types of substances.

Differential Diagnosis

For a general discussion of the differential diagnosis of Substance-Related Disorders, see p. 207. Cannabis-Induced Disorders may be characterized by symptoms (e.g., anxiety) that resemble **primary mental disorders** (e.g., Generalized Anxiety Disorder versus Cannabis-Induced Anxiety Disorder, With Generalized Anxiety, With Onset During Intoxication). See p. 210 for a discussion of this differential diagnosis. Chronic intake of cannabis can produce a lack of motivation that resembles **Dysthymic Disorder.** Acute adverse reactions to cannabis should be differentiated from the symptoms of **Panic Disorder, Major Depressive Disorder, Delusional Disorder, Bipolar Disorder,** or **Schizophrenia, Paranoid Type.** Physical examination will usually show an increased pulse and injected conjunctivas. Urine toxicological testing can be helpful in making a diagnosis.

In contrast to Cannabis Intoxication, **Alcohol Intoxication** and **Sedative, Hypnotic, or Anxiolytic Intoxication** frequently decrease appetite, increase aggressive behavior, and produce nystagmus or ataxia. **Hallucinogens** in low doses may cause a clinical picture that resembles Cannabis Intoxication. PCP, like cannabis, can be smoked and

also causes perceptual changes, but **Phencyclidine Intoxication** is much more likely to cause ataxia and aggressive behavior. Cannabis Intoxication is distinguished from the **other Cannabis-Induced Disorders** (e.g., Cannabis-Induced Anxiety Disorder, With Onset During Intoxication) because the symptoms in these latter disorders are in excess of those usually associated with Cannabis Intoxication and are severe enough to warrant independent clinical attention.

The distinction between **occasional use of cannabis** and Cannabis Dependence or Abuse can be difficult to make because social, behavioral, or psychological problems may be difficult to attribute to the substance, especially in the context of use of other substances. Denial of heavy use is common, and people appear to seek treatment for Cannabis Dependence or Abuse less often than for other types of Substance-Related Disorders.

292.9 Cannabis-Related Disorder Not Otherwise Specified

The Cannabis-Related Disorder Not Otherwise Specified category is for disorders associated with the use of cannabis that are not classifiable as Cannabis Dependence, Cannabis Abuse, Cannabis Intoxication, Cannabis Intoxication Delirium, Cannabis-Induced Psychotic Disorder, or Cannabis-Induced Anxiety Disorder.

Cocaine-Related Disorders

Cocaine, a naturally occurring substance produced by the coca plant, is consumed in several preparations (e.g., coca leaves, coca paste, cocaine hydrochloride, and cocaine alkaloids such as freebase and crack) that differ in potency due to varying levels of purity and speed of onset. However, in all forms, cocaine is the active ingredient. Chewing coca leaves is a practice generally limited to native populations in Central and South America, where cocaine is grown. The use of coca paste, a crude extract of the coca plant, occurs almost exclusively in cocaine-producing countries in Central and South America, where its nickname is "basulca." Solvents used in the preparation of coca paste often contaminate the paste and may cause toxic effects in the central nervous system and other organ systems when the paste is smoked. Cocaine hydrochloride powder is usually "snorted" through the nostrils ("snorting") or dissolved in water and injected intravenously. It is sometimes mixed with heroin, yielding a drug combination known as a "speedball."

A commonly used form of cocaine in the United States is "crack," a cocaine alkaloid that is extracted from its powdered hydrochloride salt by mixing it with sodium bicarbonate and allowing it to dry into small "rocks." Crack differs from other forms of cocaine primarily because it is easily vaporized and inhaled and thus its effects have an extremely rapid onset. The clinical syndrome and adverse effects that are associated with crack use are identical to those produced by comparable doses of other cocaine preparations. Before the advent of crack, cocaine was separated from its hydrochloride base by heating it with ether, ammonia, or some other volatile solvent.

The resulting "free base" cocaine was then smoked. This process was dangerous because of the risk that the solvents could ignite and harm the user.

This section contains discussions specific to the Cocaine-Related Disorders. Texts and criteria sets have already been provided to define the generic aspects of Substance Dependence (p. 192) and Substance Abuse (p. 198) that apply across all substances. The application of these general criteria to Cocaine Dependence and Abuse is provided below. However, there are no unique criteria sets for Cocaine Dependence or Cocaine Abuse. Specific texts and criteria sets for Cocaine Intoxication and Cocaine Withdrawal are also provided below. The Cocaine-Induced Disorders (other than Cocaine Intoxication and Withdrawal) are described in the sections of the manual with disorders with which they share phenomenology (e.g., Cocaine-Induced Mood Disorder is included in the "Mood Disorders" section). Listed below are the Cocaine Use Disorders and the Cocaine-Induced Disorders.

Cocaine Use Disorders

304.20 **Cocaine Dependence** (see p. 242)
305.60 **Cocaine Abuse** (see p. 243)

Cocaine-Induced Disorders

292.89 **Cocaine Intoxication** (see p. 244) *Specify if:* With Perceptual Disturbances
292.0 **Cocaine Withdrawal** (see p. 245)
292.81 **Cocaine Intoxication Delirium** (see p. 143)
292.11 **Cocaine-Induced Psychotic Disorder, With Delusions** (see p. 338) *Specify if:* With Onset During Intoxication
292.12 **Cocaine-Induced Psychotic Disorder, With Hallucinations** (see p. 338) *Specify if:* With Onset During Intoxication
292.84 **Cocaine-Induced Mood Disorder** (see p. 405) *Specify if:* With Onset During Intoxication/With Onset During Withdrawal
292.89 **Cocaine-Induced Anxiety Disorder** (see p. 479) *Specify if:* With Onset During Intoxication/With Onset During Withdrawal
292.89 **Cocaine-Induced Sexual Dysfunction** (see p. 562) *Specify if:* With Onset During Intoxication
292.89 **Cocaine-Induced Sleep Disorder** (see p. 655) *Specify if:* With Onset During Intoxication/With Onset During Withdrawal
292.9 **Cocaine-Related Disorder Not Otherwise Specified** (see p. 250)

Cocaine Use Disorders

304.20 Cocaine Dependence

Refer, in addition, to the text and criteria for Substance Dependence (see p. 192). Cocaine has extremely potent euphoric effects, and individuals exposed to it can develop Dependence after using the drug for very short periods of time. An early sign of

Cocaine Dependence is when the individual finds it increasingly difficult to resist using cocaine whenever it is available. Because of its short half-life of about 30–50 minutes, there is a need for frequent dosing to maintain a "high." Persons with Cocaine Dependence can spend extremely large amounts of money on the drug within a very short period of time. As a result, the person using the substance may become involved in theft, prostitution, or drug dealing or may request salary advances to obtain funds to purchase the drug. Individuals with Cocaine Dependence often find it necessary to discontinue use for several days to rest or to obtain additional funds. Important responsibilities such as work or child care may be grossly neglected to obtain or use cocaine. Mental or physical complications of chronic use such as paranoid ideation, aggressive behavior, anxiety, depression, and weight loss are common. Regardless of the route of administration, tolerance occurs with repeated use. Withdrawal symptoms, particularly hypersomnia, increased appetite, and dysphoric mood, can be seen and are likely to enhance craving and the likelihood of relapse. The overwhelming majority of individuals with Cocaine Dependence have had signs of physiological dependence on cocaine (tolerance or withdrawal) at some time during the course of their substance use. The designation of "With Physiological Dependence" is associated with an earlier onset of Dependence and more cocaine-related problems.

Specifiers

The following specifiers may be applied to a diagnosis of Cocaine Dependence (see p. 195 for more details):

With Physiological Dependence
Without Physiological Dependence

Early Full Remission
Early Partial Remission
Sustained Full Remission
Sustained Partial Remission
In a Controlled Environment

305.60 Cocaine Abuse

Refer, in addition, to the text and criteria for Substance Abuse (see p. 198). The intensity and frequency of cocaine administration is less in Cocaine Abuse as compared with Dependence. Episodes of problematic use, neglect of responsibilities, and interpersonal conflict often occur around paydays or special occasions, resulting in a pattern of brief periods (hours to a few days) of high-dose use followed by much longer periods (weeks to months) of occasional, nonproblematic use or abstinence. Legal difficulties may result from possession or use of the drug. When the problems associated with use are accompanied by evidence of tolerance, withdrawal, or compulsive behavior related to obtaining and administering cocaine, a diagnosis of Cocaine Dependence rather than Cocaine Abuse should be considered. However, since some symptoms of tolerance, withdrawal, or compulsive use can occur in individuals with Abuse but not Dependence, it is important to determine whether the full criteria for Dependence are met.

Cocaine-Induced Disorders

292.89 Cocaine Intoxication

Refer, in addition, to the text and criteria for Substance Intoxication (see p. 199). The essential feature of Cocaine Intoxication is the presence of clinically significant maladaptive behavioral or psychological changes that develop during, or shortly after, use of cocaine (Criteria A and B). Cocaine Intoxication usually begins with a "high" feeling and includes one or more of the following: euphoria with enhanced vigor, gregariousness, hyperactivity, restlessness, hypervigilance, interpersonal sensitivity, talkativeness, anxiety, tension, alertness, grandiosity, stereotyped and repetitive behavior, anger, and impaired judgment, and in the case of chronic intoxication, affective blunting with fatigue or sadness and social withdrawal. These behavioral and psychological changes are accompanied by two or more of the following signs and symptoms that develop during or shortly after cocaine use: tachycardia or bradycardia; pupillary dilation; elevated or lowered blood pressure; perspiration or chills; nausea or vomiting; evidence of weight loss; psychomotor agitation or retardation; muscular weakness, respiratory depression, chest pain, or cardiac arrhythmias; and confusion, seizures, dyskinesias, dystonias, or coma (Criterion C). Intoxication, either acute or chronic, is often associated with impaired social or occupational functioning. Severe intoxication can lead to convulsions, cardiac arrhythmias, hyperpyrexia, and death. To make a diagnosis of Cocaine Intoxication, the symptoms must not be due to a general medical condition and are not better accounted for by another mental disorder (Criterion D).

The magnitude and direction of the behavioral and physiological changes depend on many variables, including the dose used and the individual characteristics of the person using the substance (e.g., tolerance, rate of absorption, chronicity of use, context in which it is taken). Stimulant effects such as euphoria, increased pulse and blood pressure, and psychomotor activity are most commonly seen. Depressant effects such as sadness, bradycardia, decreased blood pressure, and decreased psychomotor activity are less common and generally emerge only with chronic high-dose use.

Specifier

The following specifier may be applied to a diagnosis of Cocaine Intoxication:

With Perceptual Disturbances. This specifier may be noted when hallucinations with intact reality testing or auditory, visual, or tactile illusions occur in the absence of a delirium. *Intact reality testing* means that the person knows that the hallucinations are induced by the substance and do not represent external reality. When hallucinations occur in the absence of intact reality testing, a diagnosis of Substance-Induced Psychotic Disorder, With Hallucinations, should be considered.

Diagnostic criteria for 292.89 Cocaine Intoxication

A. Recent use of cocaine.

B. Clinically significant maladaptive behavioral or psychological changes (e.g., euphoria or affective blunting; changes in sociability; hypervigilance; interpersonal sensitivity; anxiety, tension, or anger; stereotyped behaviors; impaired judgment; or impaired social or occupational functioning) that developed during, or shortly after, use of cocaine.

C. Two (or more) of the following, developing during, or shortly after, cocaine use:

(1) tachycardia or bradycardia
(2) pupillary dilation
(3) elevated or lowered blood pressure
(4) perspiration or chills
(5) nausea or vomiting
(6) evidence of weight loss
(7) psychomotor agitation or retardation
(8) muscular weakness, respiratory depression, chest pain, or cardiac arrhythmias
(9) confusion, seizures, dyskinesias, dystonias, or coma

D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Specify if:

With Perceptual Disturbances

292.0 Cocaine Withdrawal

Refer, in addition, to the text and criteria for Substance Withdrawal (see p. 201). The essential feature of Cocaine Withdrawal is the presence of a characteristic withdrawal syndrome that develops within a few hours after the cessation of (or reduction in) cocaine use that has been heavy and prolonged (Criteria A and B). The withdrawal syndrome is characterized by the development of dysphoric mood accompanied by two or more of the following physiological changes: fatigue, vivid and unpleasant dreams, insomnia or hypersomnia, increased appetite, and psychomotor retardation or agitation. Anhedonia and drug craving can often be present but are not part of the diagnostic criteria. These symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion C). The symptoms must not be due to a general medical condition and are not better accounted for by another mental disorder (Criterion D).

Acute withdrawal symptoms ("a crash") are often seen after periods of repetitive high-dose use ("runs" or "binges"). These periods are characterized by intense and unpleasant feelings of lassitude and depression and increased appetite, generally requiring several days of rest and recuperation. Depressive symptoms with suicidal ideation or behavior can occur and are generally the most serious problems seen during "crashing" or other forms of Cocaine Withdrawal.

Diagnostic criteria for 292.0 Cocaine Withdrawal

A. Cessation of (or reduction in) cocaine use that has been heavy and prolonged.

B. Dysphoric mood and two (or more) of the following physiological changes, developing within a few hours to several days after Criterion A:

(1) fatigue
(2) vivid, unpleasant dreams
(3) insomnia or hypersomnia
(4) increased appetite
(5) psychomotor retardation or agitation

C. The symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Other Cocaine-Induced Disorders

The following Cocaine-Induced Disorders are described in other sections of the manual with disorders with which they share phenomenology: **Cocaine Intoxication Delirium** (p. 143), **Cocaine-Induced Psychotic Disorder** (p. 338), **Cocaine-Induced Mood Disorder** (p. 405), **Cocaine-Induced Anxiety Disorder** (p. 479), **Cocaine-Induced Sexual Dysfunction** (p. 562), and **Cocaine-Induced Sleep Disorder** (p. 655). These disorders are diagnosed instead of Cocaine Intoxication or Cocaine Withdrawal only when the symptoms are in excess of those usually associated with the Cocaine Intoxication or Withdrawal syndrome and when the symptoms are sufficiently severe to warrant independent clinical attention.

Additional Information on Cocaine-Related Disorders

Associated Features and Disorders

Associated descriptive features and mental disorders. Cocaine is a short-acting drug that produces rapid and powerful effects on the central nervous system, especially when taken intravenously or smoked. When injected or smoked, cocaine typically produces an instant feeling of well-being, confidence, and euphoria. Dramatic behavioral changes can rapidly develop, especially in association with dependence. Individuals with Cocaine Dependence have been known to spend thousands of dollars for the substance within very short periods of time, resulting in financial catastrophes in which savings or homes have been lost. Individuals may engage in criminal activities to obtain money for cocaine. Erratic behavior, social isolation, and sexual dysfunction are often seen in the context of long-term Cocaine Dependence.

Aggressive behavior can result from the effects of cocaine; violence is also associated with the cocaine "trade." Promiscuous sexual behavior either as a result of increased desire or using sex for the purpose of obtaining cocaine (or for money to purchase cocaine) has become a factor in the spread of sexually transmitted diseases, including human immunodeficiency virus (HIV).

Acute Intoxication with high doses of cocaine may be associated with rambling speech, headache, transient ideas of reference, and tinnitus. There may also be paranoid ideation, auditory hallucinations in a clear sensorium, and tactile hallucinations ("coke bugs"), which the user usually recognizes as effects of cocaine. Extreme anger with threats or acting out of aggressive behavior may occur. Mood changes such as depression, suicidal ideation, irritability, anhedonia, emotional lability, or disturbances in attention and concentration are common, especially during Cocaine Withdrawal.

Individuals with Cocaine Dependence often have temporary depressive symptoms that meet symptomatic and duration criteria for Major Depressive Disorder (see Substance-Induced Mood Disorder, p. 405). Histories consistent with repeated Panic Attacks, social phobic–like behavior, and generalized anxiety–like syndromes are not uncommon (see Substance-Induced Anxiety Disorder, p. 479). Eating Disorders may also be associated with this substance. One of the most extreme instances of cocaine toxicity is Cocaine-Induced Psychotic Disorder (see p. 338), a disorder with delusions and hallucinations that resembles Schizophrenia, Paranoid Type. Mental disturbances that occur in association with cocaine use usually resolve within hours to days after cessation of use, although they can persist for as long as a month.

Individuals with Cocaine Dependence often develop conditioned responses to cocaine-related stimuli (e.g., craving on seeing any white powder–like substance)—a phenomenon that occurs with most drugs that cause intense psychological changes. These responses probably contribute to relapse, are difficult to extinguish, and typically persist long after detoxification is completed. Cocaine Use Disorders are often associated with other Substance Dependence or Abuse, especially involving alcohol, marijuana, heroin (a speedball), and benzodiazepines, which are often taken to reduce the anxiety and other unpleasant stimulant side effects of cocaine. Cocaine Dependence may be associated with Posttraumatic Stress Disorder, Antisocial Personality Disorder, Attention-Deficit/Hyperactivity Disorder, and Pathological Gambling.

Associated laboratory findings. Most laboratories test for benzoylecgonine, a metabolite of cocaine that typically remains in the urine for 1–3 days after a single dose and may be present for 7–12 days in those using repeated high doses. Mildly elevated liver function tests can be seen in individuals who inject cocaine or use alcohol excessively in association with cocaine. Hepatitis, sexually transmitted diseases including HIV, and tuberculosis may be associated with cocaine use. Pneumonitis or pneumothorax are occasionally observed on chest X ray. Discontinuation of chronic cocaine use is often associated with EEG changes, alterations in secretion patterns of prolactin, and down-regulation of dopamine receptors.

Associated physical examination findings and general medical conditions. A wide range of general medical conditions may occur that are specific to the route of

administration of cocaine. Persons who use cocaine intranasally ("snort") often develop sinusitis, irritation and bleeding of the nasal mucosa, and a perforated nasal septum. Those who smoke cocaine are at increased risk for respiratory problems (e.g., coughing, bronchitis, and pneumonitis due to irritation and inflammation of the tissues lining the respiratory tract). Persons who inject cocaine have puncture marks and "tracks," most commonly on their forearms, as seen in those with Opioid Dependence. HIV infection is associated with Cocaine Dependence due to the frequent intravenous injections and the increase in promiscuous sexual behavior. Other sexually transmitted diseases, hepatitis, and tuberculosis and other lung infections are also seen. Cocaine Dependence (with any route of administration) is commonly associated with signs of weight loss and malnutrition because of its appetite-suppressing effects. Chest pain may also be a common symptom. Pneumothorax can result from performing Valsalva-like maneuvers that are done to better absorb cocaine that has been inhaled. Myocardial infarction, palpitations and arrhythmias, sudden death from respiratory or cardiac arrest, and stroke have been associated with cocaine use among young and otherwise healthy persons. These incidents are probably caused by the ability of cocaine to increase blood pressure, cause vasoconstriction, or alter the electrical activity of the heart. Seizures have been observed in association with cocaine use. Traumatic injuries due to disputes resulting in violent behavior are common, especially among persons who sell cocaine. Among pregnant females, cocaine use is associated with irregularities in placental blood flow, abruptio placentae, premature labor and delivery, and an increased prevalence of infants with very low birth weights.

Specific Culture, Age, and Gender Features

Cocaine use and its attendant disorders affect all race, socioeconomic, age, and gender groups in the United States. Although the current cocaine epidemic started in the 1970s among more affluent individuals, it has shifted to include lower socioeconomic groups living in large metropolitan areas. Rural areas that previously had been spared the problems associated with illicit drug use have also been affected. Roughly similar rates have been noted across different racial groups. Males are more commonly affected than females, with a male-to-female ratio of 1.5–2.0:1.

Prevalence

As with most drugs, the prevalence of cocaine use in the United States has fluctuated greatly over the years. After a peak in the 1970s, the proportion of the population who have used cocaine in any of its forms gradually decreased until the early 1990s, after which the pace of diminution continued but at a slower rate of decline. A 1996 national survey of drug use reported that 10% of the population had ever used cocaine, with 2% reporting use in the last year and 0.8% reporting use in the last month. Crack use was much less prevalent, with around 2% of the population reporting lifetime use, 0.6% reporting use in the prior year, and 0.3% reporting use in the prior month. Individuals between ages 26 and 34 years reported the highest rates of lifetime use (21% for cocaine and 4% for crack). However, the age group with the highest rate over the past year (5% for cocaine and 1% for crack) was 18- to 25-year-olds. It should be noted

that because these surveys measured patterns of use rather than disorders, it is not known how many of those in the survey who used cocaine had symptoms that met the criteria for Dependence or Abuse.

The lifetime rate of Cocaine Abuse or Dependence was reported to be almost 2% in a 1992 community survey conducted in the United States, with a prevalence in the prior 12 months of about 0.2%.

Course

As with amphetamines, Cocaine Dependence is associated with a variety of patterns of self-administration, including episodic or daily (or almost daily) use. In the episodic pattern, the cocaine use tends to be separated by 2 or more days of nonuse (e.g., intense use over a weekend or on one or more weekdays). "Binges" are a form of episodic use that typically involve continuous high-dose use over a period of hours or days and are often associated with Dependence. Binges usually terminate only when cocaine supplies are depleted. Chronic daily use may involve high or low doses and may occur throughout the day or be restricted to only a few hours. In chronic daily use, there are generally no wide fluctuations in dose on successive days, but there is often an increase in dose over time.

Cocaine smoking and intravenous use tend to be particularly associated with a rapid progression from use to abuse or dependence, often occurring over weeks to months. Intranasal use is associated with a more gradual progression, usually occurring over months to years. Dependence is commonly associated with a progressive tolerance to the desirable effects of cocaine leading to increasing doses. With continuing use, there is a diminution of pleasurable effects due to tolerance and an increase in dysphoric effects. Few data are available on the long-term course of Cocaine Use Disorders.

Differential Diagnosis

For a general discussion of the differential diagnosis of Substance-Related Disorders, see p. 207. Cocaine-Induced Disorders may be characterized by symptoms (e.g., depressed mood) that resemble **primary mental disorders** (e.g., Major Depressive Disorder versus Cocaine-Induced Mood Disorder, With Depressive Features, With Onset During Withdrawal). See p. 210 for a discussion of this differential diagnosis. The marked mental disturbances that can result from the effects of cocaine should be distinguished from the symptoms of **Schizophrenia, Paranoid Type, Bipolar** and **other Mood Disorders, Generalized Anxiety Disorder**, and **Panic Disorder.**

Amphetamine Intoxication and **Phencyclidine Intoxication** may cause a similar clinical picture and can often only be distinguished from Cocaine Intoxication by the presence of cocaine metabolites in a urine specimen or cocaine in plasma. Cocaine Intoxication and Cocaine Withdrawal are distinguished from the other **Cocaine-Induced Disorders** (e.g., Cocaine-Induced Anxiety Disorder, With Onset During Intoxication) because the symptoms in these latter disorders are in excess of those usually associated with Cocaine Intoxication or Cocaine Withdrawal and are severe enough to warrant independent clinical attention.

292.9 Cocaine-Related Disorder Not Otherwise Specified

The Cocaine-Related Disorder Not Otherwise Specified category is for disorders associated with the use of cocaine that are not classifiable as Cocaine Dependence, Cocaine Abuse, Cocaine Intoxication, Cocaine Withdrawal, Cocaine Intoxication Delirium, Cocaine-Induced Psychotic Disorder, Cocaine-Induced Mood Disorder, Cocaine-Induced Anxiety Disorder, Cocaine-Induced Sexual Dysfunction, or Cocaine-Induced Sleep Disorder.

Hallucinogen-Related Disorders

This diverse group of substances includes ergot and related compounds (lysergic acid diethylamide [LSD], morning glory seeds), phenylalkylamines (mescaline, "STP" [2,5-dimethoxy-4-methylamphetamine], and MDMA [3,4-methylenedioxymethamphetamine; also called "Ecstasy"]), indole alkaloids (psilocybin, DMT [dimethyltryptamine]), and miscellaneous other compounds. Excluded from this group are phencyclidine (PCP) (p. 278) and cannabis and its active compound, delta-9-tetrahydrocannabinol (THC) (p. 234). Although these substances can have hallucinogenic effects, they are discussed separately because of significant differences in their other psychological and behavioral effects. Hallucinogens are usually taken orally, although DMT is smoked, and use by injection does occur.

This section contains discussions specific to the Hallucinogen-Related Disorders. Texts and criteria sets have already been provided to define the generic aspects of Substance Dependence (p. 192) and Substance Abuse (p. 198) that apply across all substances. The application of these general criteria to Hallucinogen Dependence and Abuse is provided below. However, there are no unique criteria sets for Hallucinogen Dependence or Hallucinogen Abuse. A specific text and criteria set for Hallucinogen Intoxication is also provided below. Tolerance develops with repeated use, but a clinically significant withdrawal from these substances has not been well documented. For this reason, the diagnosis of hallucinogen withdrawal is not included in this manual. The Hallucinogen-Induced Disorders (other than Hallucinogen Intoxication) are described in the sections of the manual with disorders with which they share phenomenology (e.g., Hallucinogen-Induced Mood Disorder is included in the "Mood Disorders" section). Listed below are the Hallucinogen Use Disorders and the Hallucinogen-Induced Disorders.

Hallucinogen Use Disorders

304.50 Hallucinogen Dependence (see p. 251)
305.30 Hallucinogen Abuse (see p. 252)

Hallucinogen-Induced Disorders

292.89 **Hallucinogen Intoxication** (see p. 252)
292.89 **Hallucinogen Persisting Perception Disorder (Flashbacks)** (see p. 253)
292.81 **Hallucinogen Intoxication Delirium** (see p. 143)
292.11 **Hallucinogen-Induced Psychotic Disorder, With Delusions** (see p. 338) *Specify if:* With Onset During Intoxication
292.12 **Hallucinogen-Induced Psychotic Disorder, With Hallucinations** (see p. 338) *Specify if:* With Onset During Intoxication
292.84 **Hallucinogen-Induced Mood Disorder** (see p. 405) *Specify if:* With Onset During Intoxication
292.89 **Hallucinogen-Induced Anxiety Disorder** (see p. 479) *Specify if:* With Onset During Intoxication
292.9 **Hallucinogen-Related Disorder Not Otherwise Specified** (see p. 256)

Hallucinogen Use Disorders

304.50 Hallucinogen Dependence

Refer, in addition, to the text and criteria for Substance Dependence (see p. 192). One of the generic Dependence criteria (i.e., withdrawal) does not apply to hallucinogens, and others require further explanation. Tolerance has been reported to develop rapidly to the euphoric and psychedelic effects of hallucinogens but not to the autonomic effects such as pupillary dilation, hyperreflexia, increased blood pressure, increased body temperature, piloerection, and tachycardia. Cross-tolerance exists between LSD and other hallucinogens (e.g., psilocybin and mescaline) but does not extend to most other categories of drugs such as PCP and cannabis. Hallucinogen use, even among individuals with presentations that meet full criteria for Dependence, is often limited to only a few times a week. Although withdrawal has been shown only in animals, clear reports of "craving" after stopping hallucinogens are known. Because of the long half-life and extended duration of action of most hallucinogens, individuals with Hallucinogen Dependence often spend hours to days using and recovering from their effects. In contrast, some hallucinogenic drugs (e.g., DMT) are quite short acting. Hallucinogens may continue to be used despite the knowledge of adverse effects (e.g., memory impairment while intoxicated; "bad trips," which are usually panic reactions; or flashbacks). Some individuals who use MDMA (an amphetamine-like drug with hallucinogenic effects) describe a "hangover" the day after use that is characterized by insomnia, fatigue, drowsiness, sore jaw muscles from teeth clenching, loss of balance, and headaches. Because adulterants or substitutes are often sold as "acid" or other hallucinogens, some of the reported adverse effects may be due to substances such as strychnine, PCP, or amphetamine. Some individuals can manifest dangerous behavioral reactions (e.g., jumping out of a window under the belief that one can "fly") due to lack of insight and judgment while intoxicated. These adverse effects appear to be more common among those who have preexisting mental disorders.

Specifiers

The following specifiers may be applied to a diagnosis of Hallucinogen Dependence (see p. 195 for more details):

Early Full Remission
Early Partial Remission
Sustained Full Remission
Sustained Partial Remission
In a Controlled Environment

305.30 Hallucinogen Abuse

Refer, in addition, to the text and criteria for Substance Abuse (see p. 198). Persons who misuse hallucinogens are likely to use them much less often than do those with Dependence. However, they may repeatedly fail to fulfill major role obligations at school, work, or home due to behavioral impairment caused by Hallucinogen Intoxication. The individual may use hallucinogens in situations in which it is physically hazardous (e.g., while driving a motorcycle or a car), and legal difficulties may arise due to behaviors that result from intoxication or possession of hallucinogens. There may be recurrent social or interpersonal problems due to the individual's behavior while intoxicated, isolated lifestyle, or arguments with significant others.

Hallucinogen-Induced Disorders

292.89 Hallucinogen Intoxication

Refer, in addition, to the text and criteria for Substance Intoxication (see p. 199). The essential feature of Hallucinogen Intoxication is the presence of clinically significant maladaptive behavioral or psychological changes (e.g., marked anxiety or depression, ideas of reference, difficulty focusing attention, fear of losing one's mind, paranoid ideation, impaired judgment, or impaired social or occupational functioning) that develop during or shortly after (within minutes to a few hours of) hallucinogen use (Criteria A and B). Perceptual changes are a central part of intoxication, developing during or shortly after hallucinogen use and occur in a state of full wakefulness and alertness (Criterion C). These changes include subjective intensification of perceptions, depersonalization, derealization, illusions, hallucinations, and synesthesias. In addition, the diagnosis requires that two of the following physiological signs are also present: pupillary dilation, tachycardia, sweating, palpitations, blurring of vision, tremors, and incoordination (Criterion D). The symptoms must not be due to a general medical condition and are not better accounted for by another mental disorder (Criterion E).

Hallucinogen Intoxication usually begins with some stimulant effects such as restlessness and autonomic activation. Nausea may occur. A sequence of experiences then follows, with higher doses producing more intense symptoms. Feelings of euphoria may alternate rapidly with depression or anxiety. Initial visual illusions or enhanced sensory experience may give way to hallucinations. At low doses, the per-

ceptual changes frequently do not include hallucinations. Synesthesias (a blending of senses) may result, for example, in sounds being "seen." The hallucinations are usually visual, often of geometric forms or figures, sometimes of persons and objects. More rarely, auditory or tactile hallucinations are experienced. In most cases, reality testing is preserved (i.e., the individual knows that the effects are substance induced).

Diagnostic criteria for 292.89 Hallucinogen Intoxication

A. Recent use of a hallucinogen.

B. Clinically significant maladaptive behavioral or psychological changes (e.g., marked anxiety or depression, ideas of reference, fear of losing one's mind, paranoid ideation, impaired judgment, or impaired social or occupational functioning) that developed during, or shortly after, hallucinogen use.

C. Perceptual changes occurring in a state of full wakefulness and alertness (e.g., subjective intensification of perceptions, depersonalization, derealization, illusions, hallucinations, synesthesias) that developed during, or shortly after, hallucinogen use.

D. Two (or more) of the following signs, developing during, or shortly after, hallucinogen use:

(1) pupillary dilation
(2) tachycardia
(3) sweating
(4) palpitations
(5) blurring of vision
(6) tremors
(7) incoordination

E. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

292.89 Hallucinogen Persisting Perception Disorder (Flashbacks)

The essential feature of Hallucinogen Persisting Perception Disorder (Flashbacks) is the transient recurrence of disturbances in perception that are reminiscent of those experienced during one or more earlier Hallucinogen Intoxications. The person must have had no recent Hallucinogen Intoxication and must show no current drug toxicity (Criterion A). This reexperiencing of perceptual symptoms causes clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion B). The symptoms are not due to a general medical condition (e.g., anatomical lesions and infections of the brain or visual epilepsies) and are not better accounted for by another mental disorder (e.g., delirium, dementia, or Schizophrenia) or by hypnopompic hallucinations (Criterion C). The perceptual disturbances may include geometric forms, peripheral-field images, flashes of color, intensified colors, trailing images (images left suspended in the path of a moving

object as seen in stroboscopic photography), perceptions of entire objects, afterimages (a same-colored or complementary-colored "shadow" of an object remaining after removal of the object), halos around objects, macropsia, and micropsia. The abnormal perceptions that are associated with Hallucinogen Persisting Perception Disorder occur episodically and may be self-induced (e.g., by thinking about them) or triggered by entry into a dark environment, various drugs, anxiety or fatigue, or other stressors. The episodes usually abate after several months but can last longer. Reality testing remains intact (i.e., the person recognizes that the perception is a drug effect and does not represent external reality). In contrast, if the person has a delusional interpretation concerning the etiology of the perceptual disturbance, the appropriate diagnosis would be Psychotic Disorder Not Otherwise Specified.

Diagnostic criteria for 292.89 Hallucinogen Persisting Perception Disorder (Flashbacks)

A. The reexperiencing, following cessation of use of a hallucinogen, of one or more of the perceptual symptoms that were experienced while intoxicated with the hallucinogen (e.g., geometric hallucinations, false perceptions of movement in the peripheral visual fields, flashes of color, intensified colors, trails of images of moving objects, positive afterimages, halos around objects, macropsia, and micropsia).

B. The symptoms in Criterion A cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

C. The symptoms are not due to a general medical condition (e.g., anatomical lesions and infections of the brain, visual epilepsies) and are not better accounted for by another mental disorder (e.g., delirium, dementia, Schizophrenia) or hypnopompic hallucinations.

Other Hallucinogen-Induced Disorders

The following Hallucinogen-Induced Disorders are described in other sections of the manual with disorders with which they share phenomenology: **Hallucinogen Intoxication Delirium** (p. 143), **Hallucinogen-Induced Psychotic Disorder** (p. 338), **Hallucinogen-Induced Mood Disorder** (p. 405), and **Hallucinogen-Induced Anxiety Disorder** (p. 479). These disorders are diagnosed instead of Hallucinogen Intoxication only when the symptoms are in excess of those usually associated with the Hallucinogen Intoxication syndrome and when the symptoms are sufficiently severe to warrant independent clinical attention.

Additional Information on Hallucinogen-Related Disorders

Associated Features and Disorders

When intoxicated with a hallucinogen, individuals may be voluble and discursive and show rapid alternation of moods. Fearfulness and anxiety may become intense,

with dread of insanity or death. Many hallucinogenic substances have stimulant effects (e.g., tachycardia, mild hypertension, hyperthermia, and pupillary dilation) and may cause some of the features of Amphetamine Intoxication. The perceptual disturbances and impaired judgment associated with Hallucinogen Intoxication may result in injuries or fatalities from automobile accidents, physical fights, or attempts to "fly" from high places. Environmental factors and the personality and expectations of the individual using the hallucinogen may contribute to the nature and severity of Hallucinogen Intoxication. Intoxication may also be associated with physiological changes, including increases in blood glucose, cortisol, ACTH, and prolactin. Hallucinogen Persisting Perception Disorder may produce considerable anxiety and concern and may be more common in suggestible persons. It remains controversial whether the chronic hallucinogen use produces a Psychotic Disorder de novo, triggers psychotic symptoms only in vulnerable persons, or is simply an early and continuing sign of an evolving psychotic process. Hallucinogen Abuse and Dependence also frequently occur in persons with preexisting adolescent Conduct Disorder or adult Antisocial Personality Disorder. LSD intoxication may be confirmed by urine toxicology.

Specific Culture, Age, and Gender Features

Hallucinogens may be used as part of established religious practices such as peyote in the Native American Church. Within the United States, there are regional differences and changes in patterns of use over the decades. Hallucinogen Intoxication usually first occurs in adolescence, and younger users may tend to experience more disruptive emotions. Hallucinogen use and Intoxication appear to be three times more common among males than among females.

Prevalence

Hallucinogens came into vogue in the United States in the 1960s. Over the years, a variety of these agents have been popular, but in the 1990s the two most commonly used drugs of this class have been LSD and MDMA. It is estimated that the peak prevalence of intake of hallucinogens in the United States was between 1966 and about 1970, with a subsequent decline, but there is some evidence of a modest increase beginning in approximately 1990.

According to a 1996 national survey of drug use, 10% of people aged 12 and older acknowledged ever having used a hallucinogen. The age group reporting the highest proportion who had ever used one of these drugs was 18- to 25-year-olds (16%), including 7% in the past year and 2% in the prior month. Among high school seniors, data from a 1997 national survey indicated that 15% acknowledged ever having taken a hallucinogen, including 10% in the prior year. It should be noted that because these surveys measured patterns of use rather than disorders, it is not known how many of those in the survey who used hallucinogens had symptoms that met the criteria for Dependence or Abuse.

A 1992 community survey conducted in the United States reported lifetime rates of Hallucinogen Abuse or Dependence to be about 0.6%, with a 12-month prevalence rate of about 0.1%.

Course

Hallucinogen Intoxication may be a brief and isolated event or may occur repeatedly. The intoxication may be prolonged if doses are frequently repeated during an episode. Frequent dosing, however, tends to reduce the intoxicating effects because of the development of tolerance. Depending on the drug and its route of administration, peak effects occur within a few minutes to a few hours, and intoxication ends within a few hours to a few days after dosing ends. The high prevalence of "ever having used" hallucinogens among those ages 26–34 years and the lower prevalence of recent use in that group suggest that many individuals may stop using hallucinogens as they get older. Some individuals who use hallucinogen report "flashbacks" that are not associated with any impairment or distress. On the other hand, flashbacks can cause impairment or distress in some individuals (Hallucinogen Persisting Perception Disorder; see above).

Differential Diagnosis

For a general discussion of the differential diagnosis of Substance-Related Disorders, see p. 207. Hallucinogen-Induced Disorders may be characterized by symptoms (e.g., delusions) that resemble **primary mental disorders** (e.g., Schizophreniform Disorder versus Hallucinogen-Induced Psychotic Disorder, With Delusions, With Onset During Intoxication). See p. 210 for a discussion of this differential diagnosis.

Hallucinogen Intoxication should be differentiated from **Amphetamine** or **Phencyclidine Intoxication.** Toxicological tests are useful in making this distinction. **Intoxication with anticholinergics** can also produce hallucinations, but they are often associated with physical findings of pupillary dilation, fever, dry mouth and skin, flushed face, and visual disturbances. Hallucinogen Intoxication is distinguished from the **other Hallucinogen-Induced Disorders** (e.g., Hallucinogen-Induced Anxiety Disorder, With Onset During Intoxication) because the symptoms in these latter disorders are in excess of those usually associated with Hallucinogen Intoxication and are severe enough to warrant independent clinical attention.

Hallucinogen Intoxication is distinguished from **Hallucinogen Persisting Perception Disorder (Flashbacks)** by the fact that the latter continues episodically for weeks (or longer) after the most recent intoxication. In Hallucinogen Persisting Perception Disorder, the individual does not believe that the perception represents external reality, whereas a person with a **Psychotic Disorder** often believes that the perception is real. Hallucinogen Persisting Perception Disorder may be distinguished from **migraine, epilepsy,** or a **neurological condition** by neuro-ophthalmological history, physical examination, and appropriate laboratory evaluation.

292.9 Hallucinogen-Related Disorder Not Otherwise Specified

The Hallucinogen-Related Disorder Not Otherwise Specified category is for disorders associated with the use of hallucinogens that are not classifiable as Hallucinogen Dependence, Hallucinogen Abuse, Hallucinogen Intoxication, Hallucinogen Persisting Perception Disorder, Hallucinogen Intoxication Delirium, Hallucinogen-Induced

Psychotic Disorder, Hallucinogen-Induced Mood Disorder, or Hallucinogen-Induced Anxiety Disorder.

Inhalant-Related Disorders

This section includes disorders induced by inhaling the aliphatic and aromatic hydrocarbons found in substances such as gasoline, glue, paint thinners, and spray paints. Less commonly used are halogenated hydrocarbons (found in cleaners, typewriter correction fluid, spray-can propellants) and other volatile compounds containing esters, ketones, and glycols. The active ingredients include toluene, benzene, acetone, tetrachloroethylene, methanol, and other substances. Reflecting different modes of action and profiles of associated problems, disorders arising from the use of anesthetic gases (e.g., nitrous oxide, ether) as well as short-acting vasodilators (e.g., amyl and butyl nitrate ["poppers"]) are described instead under Other (or Unknown) Substance–Related Disorders on p. 294. Most compounds that are inhaled are a mixture of several substances that can produce psychoactive effects, and it is often difficult to ascertain the exact substance responsible for the disorder. Unless there is clear evidence that a single, unmixed substance has been used, the general term *inhalant* should be used in recording the diagnosis. These volatile substances are available in a wide variety of commercial products and may be used interchangeably, depending on availability and personal preference. Although there may be subtle differences in the psychoactive and physical effects of the different compounds, not enough is known about their differential effects to distinguish among them. All are capable of producing Dependence, Abuse, and Intoxication.

Several methods are used to inhale intoxicating vapors. Most commonly, a rag soaked with the substance is applied to the mouth and nose, and the vapors are breathed in—a process called "huffing." The substance may also be placed in a paper or plastic bag and the gases in the bag inhaled—a procedure called "bagging." Substances may also be inhaled directly from containers or from aerosols sprayed in the mouth or nose. There are reports of individuals heating these compounds to accelerate vaporization. The inhalants reach the lungs, bloodstream, and target sites very rapidly.

This section contains discussions specific to the Inhalant-Related Disorders. Texts and criteria sets have already been provided for generic aspects of Substance Dependence (p. 192) and Substance Abuse (p. 198) that apply across all substances. The application of these general criteria to Inhalant Dependence and Abuse is provided below. However, there are no unique criteria sets for Inhalant Dependence or Inhalant Abuse. A specific text and criteria set for Inhalant Intoxication is also provided below. Tolerance has been reported among individuals with heavy use. Although withdrawal-like symptoms have been seen in animals after repeated exposure to trichloroethane, it has not been established that a clinically meaningful withdrawal syndrome occurs in humans. For this reason, the diagnosis of inhalant withdrawal is not included in this manual. The Inhalant-Induced Disorders (other than Inhalant Intoxication) are described in the sections of the manual with disorders with which

they share phenomenology (e.g., Inhalant-Induced Mood Disorder is included in the "Mood Disorders" section). Listed below are the Inhalant Use Disorders and the Inhalant-Induced Disorders.

Inhalant Use Disorders

304.60 **Inhalant Dependence** (see p. 258)
305.90 **Inhalant Abuse** (see p. 259)

Inhalant-Induced Disorders

292.89 **Inhalant Intoxication** (see p. 259)
292.81 **Inhalant Intoxication Delirium** (see p. 143)
292.82 **Inhalant-Induced Persisting Dementia** (see p. 168)
292.11 **Inhalant-Induced Psychotic Disorder, With Delusions** (see p. 338) *Specify if:* With Onset During Intoxication
292.12 **Inhalant-Induced Psychotic Disorder, With Hallucinations** (see p. 338) *Specify if:* With Onset During Intoxication
292.84 **Inhalant-Induced Mood Disorder** (see p. 405) *Specify if:* With Onset During Intoxication
292.89 **Inhalant-Induced Anxiety Disorder** (see p. 479) *Specify if:* With Onset During Intoxication
292.9 **Inhalant-Related Disorder Not Otherwise Specified** (see p. 263)

Inhalant Use Disorders

304.60 Inhalant Dependence

Refer, in addition, to the text and criteria for Substance Dependence (see p. 192). Some of the generic Dependence criteria do not apply to inhalants, whereas others require further explanation. Tolerance to the effects of inhalants has been reported among individuals with heavy use, although its prevalence and clinical significance are unknown. A possible mild withdrawal syndrome has been reported but has not been well documented and does not appear to be clinically significant. Thus, Inhalant Dependence includes neither a characteristic withdrawal syndrome nor evidence of inhalant use to relieve or avoid withdrawal symptoms. However, inhalants may be taken over longer periods of time or in larger amounts than was originally intended, and individuals who use them may find it difficult to cut down or regulate inhalant use. Because inhalants are inexpensive, legal, and easily available, spending a great deal of time attempting to procure inhalants would be rare. However, substantial amounts of time may be spent on using and recuperating from the effects of inhalant use. Recurrent inhalant use may result in the individual giving up or reducing important social, occupational, or recreational activities, and substance use may continue despite the individual's knowledge of physical problems (e.g., liver disease or central and peripheral nervous system damage) or psychological problems (e.g., severe depression) caused by the use.

Specifiers

The following specifiers may be applied to a diagnosis of Inhalant Dependence (see p. 195 for more details):

Early Full Remission
Early Partial Remission
Sustained Full Remission
Sustained Partial Remission
In a Controlled Environment

305.90 Inhalant Abuse

Refer, in addition, to the text and criteria for Substance Abuse (see p. 198). Individuals who abuse inhalants may use them in hazardous circumstances (e.g., driving an automobile or operating machinery when judgment and coordination are impaired by Inhalant Intoxication). Users can also become agitated and even violent during intoxication, with subsequent legal and interpersonal problems. Repeated intake of inhalants may be associated with family conflict and school problems (e.g., truancy, poor grades, dropping out of school) or difficulties at work.

Inhalant-Induced Disorders

292.89 Inhalant Intoxication

Refer, in addition, to the text and criteria for Substance Intoxication (see p. 199). The essential feature of Inhalant Intoxication is the presence of clinically significant maladaptive behavioral or psychological changes (e.g., confusion, belligerence, assaultiveness, apathy, impaired judgment, impaired social or occupational functioning) that develop during, or shortly after, the intentional use of, or short-term, high-dose exposure to, volatile inhalants (Criteria A and B). The maladaptive changes are accompanied by signs that include dizziness or visual disturbances (blurred vision or diplopia), nystagmus, incoordination, slurred speech, an unsteady gait, tremor, and euphoria. Higher doses of inhalants may lead to the development of lethargy and psychomotor retardation, generalized muscle weakness, depressed reflexes, stupor, or coma (Criterion C). The disturbance must not be due to a general medical condition and is not better accounted for by another mental disorder (Criterion D).

Diagnostic criteria for 292.89 Inhalant Intoxication

A. Recent intentional use or short-term, high-dose exposure to volatile inhalants (excluding anesthetic gases and short-acting vasodilators).

B. Clinically significant maladaptive behavioral or psychological changes (e.g., belligerence, assaultiveness, apathy, impaired judgment, impaired social or occupational functioning) that developed during, or shortly after, use of or exposure to volatile inhalants.

C. Two (or more) of the following signs, developing during, or shortly after, inhalant use or exposure:

(1) dizziness
(2) nystagmus
(3) incoordination
(4) slurred speech
(5) unsteady gait
(6) lethargy
(7) depressed reflexes
(8) psychomotor retardation
(9) tremor
(10) generalized muscle weakness
(11) blurred vision or diplopia
(12) stupor or coma
(13) euphoria

D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Other Inhalant-Induced Disorders

The following Inhalant-Induced Disorders are described in other sections of the manual with disorders with which they share phenomenology: **Inhalant Intoxication Delirium** (p. 143), **Inhalant-Induced Persisting Dementia** (p. 168), **Inhalant-Induced Psychotic Disorder** (p. 338), **Inhalant-Induced Mood Disorder** (p. 405), and **Inhalant-Induced Anxiety Disorder** (p. 479). These disorders are diagnosed instead of Inhalant Intoxication only when the symptoms are in excess of those usually associated with Inhalant Intoxication and when the symptoms are sufficiently severe to warrant independent clinical attention.

Additional Information on Inhalant-Related Disorders

Associated Features and Disorders

Associated descriptive features and mental disorders. Individuals with Inhalant Intoxication may present with auditory, visual, or tactile hallucinations or other perceptual disturbances (macropsia, micropsia, illusionary misperceptions, alterations in time perception). Delusions (such as believing one can fly) may develop during periods of Inhalant Intoxication, especially those characterized by marked confusion; in some cases, these delusions may be acted on with resultant injury. Anxiety may also be present. Repeated but episodic intake of inhalants may first be associated with school problems (e.g., truancy, poor grades, dropping out of school) as well as family conflict. Use by older adolescents and young adults is often associated with social and work problems (e.g., delinquency, unemployment). Most commonly, inhalants are used by adolescents in a group setting. Solitary use tends to be more typical of those with long-term, heavy use. The use of inhalants as the predominant substance among those seeking help for Substance Dependence appears to be rare, but inhalants may be a secondary drug used by individuals with Dependence on other substances. In some individuals, there may be a progression to a stage at which inhalants become the preferred substance, especially among individuals with Antisocial Personality Disorder.

Associated laboratory findings. Direct assay for inhalants is not generally available and is not part of routine screening for drugs of abuse. However, a metabolite of toluene, hippuric acid, is excreted in the urine, and a ratio greater than 1 in relation to creatinine might be suggestive of toluene use. Damage to muscles, kidneys, liver, and other organs can result in laboratory tests being indicative of these pathological conditions.

Associated physical examination findings and general medical conditions. The odor of paint or solvents may be present on the breath or clothes of individuals who use inhalants, or there may be a residue of the substance on clothing or skin. A "glue sniffer's rash" may be evident around the nose and mouth, and conjunctival irritation may be noted. There may be evidence of trauma due to disinhibited behavior or burns due to the flammable nature of these compounds. Nonspecific respiratory findings include evidence of upper- or lower-airway irritation, including increased airway resistance, pulmonary hypertension, acute respiratory distress, coughing, sinus discharge, dyspnea, rales, or rhonchi; rarely, cyanosis may result from pneumonitis or asphyxia. There may also be headache, generalized weakness, abdominal pain, nausea, and vomiting.

Inhalants can cause both central and peripheral nervous system damage, which may be permanent. Examination of the individual who chronically uses inhalants may reveal a number of neurological deficits, including generalized weakness and peripheral neuropathies. Cerebral atrophy, cerebellar degeneration, and white matter lesions resulting in cranial nerve or pyramidal tract signs have been reported

among individuals with heavy use. Recurrent use may lead to the development of hepatitis (which may progress to cirrhosis) or metabolic acidosis consistent with distal renal tubular acidosis. Chronic renal failure, hepatorenal syndrome, and proximal renal tubular acidosis have also been reported, as has bone marrow suppression, especially with benzene and trichloroethylene, with the former possibly increasing the risk for acute myelocytic leukemia. Some inhalants (e.g., methylene chloride) may be metabolized to carbon monoxide. Death may occur from respiratory or cardiovascular depression; in particular, "sudden sniffing death" may result from acute arrhythmia, hypoxia, or electrolyte abnormalities.

Specific Culture, Age, and Gender Features

While most surveys report few differences based solely on ethnic or racial groups, a study of children in rural Alaska noted that almost 50% of Alaskan-native children in isolated villages have at some time used solvents to get high. Because of their low cost and easy availability, inhalants are often the first drugs of experimentation for young people, and there may be a higher incidence among those living in economically depressed areas. Inhalant use may begin by ages 9–12 years, appears to peak in adolescence, and is less common after age 35 years. Males account for 70%–80% of inhalant-related emergency-room visits.

Prevalence

It is difficult to establish the true prevalence of inhalant use because these drugs are easy to obtain legally, and their importance might be underestimated in surveys. In addition, the popularity of different inhalants changes over time, with, for example, a decrease over the past decade in the proportion of users preferring glues and aerosols and an increase in those inhaling lighter fluid.

A 1996 national survey of drug use reported that around 6% of people in the United States acknowledged ever having used inhalants, with 1% reporting use in the past year and 0.4% in the past month. The highest lifetime prevalence was seen for 18- to 25-year-olds (11%), while 12- to 17-year-olds predominated for use in the prior year (4%) or in the prior month (2%). Higher rates are reported among a variety of subgroups, including almost 30% of prison inmates who report ever having used these substances. Rates of use are also higher among populations who live in poverty, especially children and young adults. It should be noted that because these surveys measured patterns of use rather than disorders, it is not known how many of those in the survey who used inhalants had symptoms that met criteria for Dependence or Abuse. The prevalence of Inhalant Dependence or Abuse in the general population is unknown.

Course

It can be difficult to match inhalant dose to effect because the different methods of administration and the varying concentrations of inhalants in the products used cause highly variable concentrations in the body. The time course of Inhalant Intoxication is related to the pharmacological characteristics of the specific substance used, but it

is typically brief, lasting from a few minutes to an hour. Onset is rapid, peaking within a few minutes after inhaling. Younger children diagnosed as having Inhalant Dependence may use inhalants several times a week, often on weekends and after school. Severe dependence in adults may involve varying periods of intoxication throughout each day and occasional periods of heavier use that may last several days. This pattern may persist for years, with recurrent need for treatment. Individuals who use inhalants may have a preferred level or degree of intoxication, and the method of administration (typically sniffing from a container or breathing through a rag soaked in the substance) may allow the individual to maintain that level for several hours. Cases have also been reported of the development of Dependence in industrial workers who have long-term occupational exposure and access to inhalants. A worker may begin to use the compound for its psychoactive effects and subsequently develop a pattern of Dependence. Use leading to Dependence may also occur in people who do not have access to other substances (e.g., prisoners, isolated military personnel, and adolescents or young adults in isolated rural areas).

Differential Diagnosis

For a general discussion of the differential diagnosis of Substance-Related Disorders, see p. 207. Inhalant-Induced Disorders may be characterized by symptoms (e.g., depressed mood) that resemble **primary mental disorders** (e.g., Major Depressive Disorder versus Inhalant-Induced Mood Disorder, With Depressive Features, With Onset During Intoxication). See p. 210 for a discussion of this differential diagnosis.

The symptoms of mild to moderate Inhalant Intoxication can be similar to those of **Alcohol Intoxication** and **Sedative, Hypnotic, or Anxiolytic Intoxication**. Breath odor or residues on body or clothing may be important differentiating clues, but should not be relied on exclusively. Individuals who chronically use inhalants are likely to use other substances frequently and heavily, further complicating the diagnostic picture. Concomitant use of alcohol may also make the differentiation difficult. History of the drug used and characteristic findings (including odor of solvent or paint residue) may differentiate Inhalant Intoxication from other substance intoxications; additionally, symptoms may subside faster with Inhalant Intoxication than with other substance intoxications. Rapid onset and resolution may also differentiate Inhalant Intoxication from other mental disorders and neurological conditions. Inhalant Intoxication is distinguished from the **other Inhalant-Induced Disorders** (e.g., Inhalant-Induced Mood Disorder, With Onset During Intoxication) because the symptoms in these latter disorders are in excess of those usually associated with Inhalant Intoxication and are severe enough to warrant independent clinical attention.

Industrial workers may occasionally be **accidentally exposed to volatile chemicals** and suffer physiological intoxication. The category "Other Substance-Related Disorders" should be used for such toxin exposures.

292.9 Inhalant-Related Disorder Not Otherwise Specified

The Inhalant-Related Disorder Not Otherwise Specified category is for disorders associated with the use of inhalants that are not classifiable as Inhalant Dependence,

Inhalant Abuse, Inhalant Intoxication, Inhalant Intoxication Delirium, Inhalant-Induced Persisting Dementia, Inhalant-Induced Psychotic Disorder, Inhalant-Induced Mood Disorder, or Inhalant-Induced Anxiety Disorder.

Nicotine-Related Disorders

Nicotine Dependence and Withdrawal can develop with use of all forms of tobacco (cigarettes, chewing tobacco, snuff, pipes, and cigars) and with prescription medications (nicotine gum and patch). The relative ability of these products to produce Dependence or to induce Withdrawal is associated with the rapidity characteristic of the route of administration (smoked over oral over transdermal) and the nicotine content of the product.

This section contains discussions specific to the Nicotine-Related Disorders. Texts and criteria sets have already been provided to define the generic aspects of Substance Dependence (p. 192) that apply across all substances. The application of these general criteria to Nicotine Dependence is provided below. Reflecting a paucity of clinically relevant data, nicotine intoxication and nicotine abuse are not included in DSM-IV. A specific text and criteria set for Nicotine Withdrawal are also provided below. Listed below are the Nicotine-Related Disorders.

Nicotine Use Disorder

305.1 Nicotine Dependence (see p. 264)

Nicotine-Induced Disorder

292.0 Nicotine Withdrawal (see p. 265)
292.9 Nicotine-Related Disorder Not Otherwise Specified (see p. 269)

Nicotine Use Disorder

305.1 Nicotine Dependence

Refer, in addition, to the text and criteria for Substance Dependence (see p. 192). Some of the generic Dependence criteria do not appear to apply to nicotine, whereas others require further explanation. Tolerance to nicotine is manifested by a more intense effect of nicotine the first time it is used during the day and the absence of nausea and dizziness with repeated intake, despite regular use of substantial amounts of nicotine. Cessation of nicotine use produces a well-defined withdrawal syndrome that is described below. Many individuals who use nicotine take nicotine to relieve or to avoid withdrawal symptoms when they wake up in the morning or after being in a situation where use is restricted (e.g., at work or on an airplane). Individuals who smoke and other individuals who use nicotine are likely to find that they use up their supply of cigarettes or other nicotine-containing products faster than originally in-

tended. Although more than 80% of individuals who smoke express a desire to stop smoking and 35% try to stop each year, less than 5% are successful in unaided attempts to quit. Spending a great deal of time in using the substance is best exemplified by chain-smoking. Because nicotine sources are readily and legally available, spending a great deal of time attempting to procure nicotine would be rare. Giving up important social, occupational, or recreational activities can occur when an individual forgoes an activity because it occurs in smoking-restricted areas. Continued use despite knowledge of medical problems related to smoking is a particularly important health problem (e.g., an individual who continues to smoke despite having a tobacco-induced general medical condition such as bronchitis or chronic obstructive lung disease).

Specifiers

The following specifiers may be applied to a diagnosis of Nicotine Dependence (see p. 195 for more details):

With Physiological Dependence
Without Physiological Dependence

Early Full Remission
Early Partial Remission
Sustained Full Remission
Sustained Partial Remission

Nicotine-Induced Disorder

292.0 Nicotine Withdrawal

Refer, in addition, to the text and criteria for Substance Withdrawal (see p. 201). The essential feature of Nicotine Withdrawal is the presence of a characteristic withdrawal syndrome that develops after the abrupt cessation of, or reduction in, the use of nicotine-containing products following a prolonged period (at least several weeks) of daily use (Criteria A and B). The withdrawal syndrome includes four or more of the following: dysphoric or depressed mood; insomnia; irritability, frustration, or anger; anxiety; difficulty concentrating; restlessness or impatience; decreased heart rate; and increased appetite or weight gain. The withdrawal symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (Criterion C). The symptoms must not be due to a general medical condition and are not better accounted for by another mental disorder (Criterion D).

These symptoms are in large part due to nicotine deprivation and are typically more intense among individuals who smoke cigarettes than among individuals who use other nicotine-containing products. The more rapid onset of nicotine effects with cigarette smoking leads to a more intensive use pattern that is more difficult to give up because of the frequency and rapidity of reinforcement and the greater physical dependence on nicotine. In individuals who smoke cigarettes, heart rate decreases by 5 to 12 beats per minute in the first few days after stopping smoking, and weight

increases an average of 2–3 kg over the first year after stopping smoking. Mild symptoms of withdrawal may occur after switching to low-tar/nicotine cigarettes and after stopping the use of smokeless (chewing) tobacco, nicotine gum, or nicotine patches.

Diagnostic criteria for 292.0 Nicotine Withdrawal

A. Daily use of nicotine for at least several weeks.

B. Abrupt cessation of nicotine use, or reduction in the amount of nicotine used, followed within 24 hours by four (or more) of the following signs:

(1) dysphoric or depressed mood
(2) insomnia
(3) irritability, frustration, or anger
(4) anxiety
(5) difficulty concentrating
(6) restlessness
(7) decreased heart rate
(8) increased appetite or weight gain

C. The symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Additional Information on Nicotine-Related Disorders

Associated Features and Disorders

Associated descriptive features and mental disorders. Craving is an important element in Nicotine Withdrawal and may account for the difficulty that individuals have in giving up nicotine-containing products. Other symptoms associated with Nicotine Withdrawal include a desire for sweets and impaired performance on tasks requiring vigilance. Several features associated with Nicotine Dependence appear to predict a greater level of difficulty in stopping nicotine use: smoking soon after waking, smoking when ill, difficulty refraining from smoking, reporting the first cigarette of the day to be the one most difficult to give up, and smoking more in the morning than in the afternoon. The number of cigarettes smoked per day, the nicotine yield of the cigarette, and the number of pack-years also are related to the likelihood of an individual stopping smoking. Nicotine Dependence is more common among individuals with other mental disorders such as Schizophrenia. Depending on the population studied, from 55% to 90% of individuals with other mental disorders smoke, compared to 30% in the general population. Mood, Anxiety, and other Substance-Related Disorders may be more common in individuals who smoke than in those who are ex-smokers and those who have never smoked.

Associated laboratory findings. Withdrawal symptoms are associated with a slowing on EEG, decreases in catecholamine and cortisol levels, rapid eye movement (REM) changes, impairment on neuropsychological testing, and decreased metabolic rate. Smoking increases the metabolism of many medications prescribed for the treatment of mental disorders and of other substances. Thus, cessation of smoking can increase the blood levels of these medications and other substances, sometimes to a clinically significant degree. This effect does not appear to be due to nicotine but rather to other compounds in tobacco. Nicotine and its metabolite cotinine can be measured in blood, saliva, or urine. Persons who smoke also often have diminished pulmonary function tests and increased mean corpuscular volume (MCV).

Associated physical examination findings and general medical conditions. Nicotine Withdrawal may be associated with a dry or productive cough, decreased heart rate, increased appetite or weight gain, and a dampened orthostatic response. The most common signs of Nicotine Dependence are tobacco odor, cough, evidence of chronic obstructive pulmonary disease, and excessive skin wrinkling. Tobacco stains on the fingers can occur but are rare. Tobacco use can markedly increase the risk of lung, oral, and other cancers; cardiovascular and cerebrovascular conditions; chronic obstructive and other lung diseases; ulcers; maternal and fetal complications; and other conditions. Although most of these problems appear to be caused by the carcinogens and carbon monoxide in tobacco smoke rather than by nicotine itself, nicotine may increase the risk for cardiovascular events. Those who have never smoked but are chronically exposed to tobacco smoke appear to be at increased risk for conditions such as lung cancer and heart disease.

Specific Culture, Age, and Gender Features

The prevalence of smoking is decreasing in most industrialized nations but is increasing in the developing areas. African American men tend to have higher nicotine blood levels for a given number of cigarettes compared with other racial groups, which might contribute to greater difficulty in cessation of smoking. The highest lifetime prevalence of use of nicotine, in contrast to other drugs, is in older individuals. In the United States, the prevalence of smoking is slightly higher in males than in females; however, the prevalence of smoking is decreasing more rapidly in males than in females. In other countries, smoking is often much more prevalent among males. Use of smokeless tobacco is much higher in males than females, with males outnumbering females 8 to 1 or more.

Prevalence

There were fairly substantial decreases in regular smoking and Nicotine Dependence in most groups in the 1980s, followed by a leveling off of this rate of decline, estimated to be only 2% or less in the late 1990s. Greater levels of decrease were seen for men than for women, and for Caucasian individuals than for those of African American or Hispanic background. Several groups have shown an actual increase in the prevalence of regular smoking or Dependence in the mid-1990s, especially women who have less than a high school education.

A 1996 national survey of drug use reported that 72% of the adult population in the United States had ever used cigarettes, with 32% reporting use in the prior year and 29% reporting use in the prior month. The lifetime prevalence in the United States was highest among individuals aged 35 and older (78%), although use in the prior year and prior month was highest for people between ages 18 and 25 (45% and 38%, respectively). The 1996 survey also indicated substantial rates of use of smokeless tobacco, with 17% of the U.S. population acknowledging ever having used these products, and 5% reporting use in the prior month. Surveys of drug use in high school students indicate that tobacco use in the younger population is on the rise. According to a 1997 survey of 12th-graders, 65% reported ever having used cigarettes—an increase over the 1994 proportion of 62% (but not as high as the peak lifetime prevalence of 76% in 1977).

Since it is estimated that between 80% and 90% of regular smokers have Nicotine Dependence, up to 25% of the U.S. population may have Nicotine Dependence. The rate of Nicotine Dependence has been shown to be higher in individuals with Schizophrenia or Alcohol Dependence than in the general population.

Course

Nicotine intake usually begins in the early teens, with 95% of those who continue to smoke by age 20 becoming regular daily smokers. More than 80% of smokers report attempting to quit, but during the first attempt, less than 25% of those who do abstain remain successful for extended periods of time. In the longer run, about 45% of those who consume nicotine on a regular basis are able to stop smoking eventually. For the large majority of smokers who have Nicotine Dependence, cessation of cigarette smoking usually results in withdrawal symptoms that begin within a few hours of cessation and typically peak in intensity between the first and fourth days, with most residual symptoms greatly improving by 3 to 4 weeks, but with hunger and weight gain persisting for 6 months or more. This off–and–on again course and repeated desire for abstinence probably apply equally to consumption of other forms of nicotine, including chewing tobacco.

Familial Pattern

The risk for smoking increases threefold if a first-degree biological relative smokes. Twin and adoption studies indicate that genetic factors contribute to the onset and continuation of smoking, with the degree of heritability equivalent to that observed with Alcohol Dependence.

Differential Diagnosis

For a general discussion of the differential diagnosis of Substance-Related Disorders, see p. 207.

The symptoms of Nicotine Withdrawal overlap with those of **other substance withdrawal syndromes; Caffeine Intoxication; Anxiety, Mood,** and **Sleep Disorders;** and **medication-induced akathisia.** Admission to smoke-free inpatient units can induce withdrawal symptoms that might mimic, intensify, or disguise other diagnoses. Re-

duction of symptoms associated with the resumption of smoking or nicotine-replacement therapy confirms the diagnosis.

Because regular nicotine use does not appear to impair mental functioning, Nicotine Dependence is not readily confused with other Substance-Related Disorders and mental disorders.

292.9 Nicotine-Related Disorder Not Otherwise Specified

The Nicotine-Related Disorder Not Otherwise Specified category is for disorders associated with the use of nicotine that are not classifiable as Nicotine Dependence or Nicotine Withdrawal.

Opioid-Related Disorders

The opioids include natural opioids (e.g., morphine), semisynthetics (e.g., heroin), and synthetics with morphine-like action (e.g., codeine, hydromorphone, methadone, oxycodone, meperidine, fentanyl). Medications such as pentazocine and buprenorphine that have both opiate agonist and antagonist effects are also included in this class because, especially at lower doses, their agonist properties produce similar physiological and behavioral effects as classic opioid agonists. Opioids are prescribed as analgesics, anesthetics, antidiarrheal agents, or cough suppressants. Heroin is one of the most commonly misused drugs of this class and is usually taken by injection, although it can be smoked or "snorted" when very pure heroin is available. Fentanyl is injected, whereas cough suppressants and antidiarrheal agents are taken orally. The other opioids are taken both by injection and orally.

This section contains discussions specific to the Opioid-Related Disorders. Texts and criteria sets have already been provided for the generic aspects of Substance Dependence (p. 192) and Substance Abuse (p. 198) that apply across all substances. The application of these general criteria to Opioid Dependence and Abuse is provided below. However, there are no unique criteria sets for Opioid Dependence and Opioid Abuse. Specific text and criteria sets for Opioid Intoxication and Opioid Withdrawal are also provided below. The Opioid-Induced Disorders (other than Opioid Intoxication and Withdrawal) are described in the sections of the manual with disorders with which they share phenomenology (e.g., Opioid-Induced Mood Disorder is included in the "Mood Disorders" section). Listed below are the Opioid Use Disorders and the Opioid-Induced Disorders.

Opioid Use Disorders

304.00 **Opioid Dependence** (see p. 270)
305.50 **Opioid Abuse** (see p. 271)

Opioid-Induced Disorders

292.89 **Opioid Intoxication** (see p. 271) *Specify if:* With Perceptual Disturbances

292.0 **Opioid Withdrawal** (see p. 272)

292.81 **Opioid Intoxication Delirium** (see p. 143)

292.11 **Opioid-Induced Psychotic Disorder, With Delusions** (see p. 338) *Specify if:* With Onset During Intoxication

292.12 **Opioid-Induced Psychotic Disorder, With Hallucinations** (see p. 338) *Specify if:* With Onset During Intoxication

292.84 **Opioid-Induced Mood Disorder** (see p. 405) *Specify if:* With Onset During Intoxication

292.89 **Opioid-Induced Sexual Dysfunction** (see p. 562) *Specify if:* With Onset During Intoxication

292.89 **Opioid-Induced Sleep Disorder** (see p. 655) *Specify if:* With Onset During Intoxication/With Onset During Withdrawal

292.9 **Opioid-Related Disorder Not Otherwise Specified** (see p. 277)

Opioid Use Disorders

304.00 Opioid Dependence

Refer, in addition, to the text and criteria for Substance Dependence (see p. 192). Most individuals with Opioid Dependence have significant levels of tolerance and will experience withdrawal on abrupt discontinuation of opioid substances. Opioid Dependence includes signs and symptoms that reflect compulsive, prolonged self-administration of opioid substances that are used for no legitimate medical purpose or, if a general medical condition is present that requires opioid treatment, that are used in doses that are greatly in excess of the amount needed for pain relief. Persons with Opioid Dependence tend to develop such regular patterns of compulsive drug use that daily activities are typically planned around obtaining and administering opioids. Opioids are usually purchased on the illegal market but may also be obtained from physicians by faking or exaggerating general medical problems or by receiving simultaneous prescriptions from several physicians. Health care professionals with Opioid Dependence will often obtain opioids by writing prescriptions for themselves or by diverting opioids that have been prescribed for patients or from pharmacy supplies.

Specifiers

The following specifiers may be applied to a diagnosis of Opioid Dependence (see p. 195 for more details):

With Physiological Dependence
Without Physiological Dependence

Early Full Remission
Early Partial Remission
Sustained Full Remission
Sustained Partial Remission
On Agonist Therapy
In a Controlled Environment

305.50 Opioid Abuse

Refer, in addition, to the text and criteria for Substance Abuse (see p. 198). Legal difficulties may arise as a result of behavior while intoxicated with opioids or because an individual has resorted to illegal sources of supply. Persons who abuse opioids typically use these substances much less often than do those with dependence and do not develop significant withdrawal symptoms. When problems related to opioid use are accompanied by evidence of withdrawal or compulsive behavior related to the use of opioids, further information should be gathered to see if a diagnosis of Opioid Dependence, rather than Opioid Abuse, is more appropriate.

Opioid-Induced Disorders

292.89 Opioid Intoxication

Refer, in addition, to the text and criteria for Substance Intoxication (see p. 199). The essential feature of Opioid Intoxication is the presence of clinically significant maladaptive behavioral or psychological changes (e.g., initial euphoria followed by apathy, dysphoria, psychomotor agitation or retardation, impaired judgment, or impaired social or occupational functioning) that develop during, or shortly after, opioid use (Criteria A and B). Intoxication is accompanied by pupillary constriction (unless there has been a severe overdose with consequent anoxia and pupillary dilation) and one or more of the following signs: drowsiness (described as being "on the nod") or even coma, slurred speech, and impairment in attention or memory (Criterion C). Individuals with Opioid Intoxication may demonstrate inattention to the environment, even to the point of ignoring potentially harmful events. The symptoms must not be due to a general medical condition and are not better accounted for by another mental disorder (Criterion D).

The magnitude of the behavioral and physiological changes that result from opioid use depends on the dose as well as characteristics of the individual using the substance (e.g., tolerance, rate of absorption, chronicity of use). Symptoms of Opioid Intoxication usually last for several hours, a time frame that is consistent with the half-life of most opioid drugs. Severe intoxication following an opioid overdose can lead to coma, respiratory depression, pupillary dilation, unconsciousness, and even death.

Specifier

The following specifier may be applied to a diagnosis of Opioid Intoxication:

With Perceptual Disturbances. This specifier may be noted in the rare instance in which hallucinations with intact reality testing or auditory, visual, or tactile illusions occur in the absence of a delirium. *Intact reality testing* means that the person knows that the hallucinations are induced by the substance and do not represent external reality. When hallucinations occur in the absence of intact reality testing, a diagnosis of Substance-Induced Psychotic Disorder, With Hallucinations, should be considered.

Diagnostic criteria for 292.89 Opioid Intoxication

A. Recent use of an opioid.

B. Clinically significant maladaptive behavioral or psychological changes (e.g., initial euphoria followed by apathy, dysphoria, psychomotor agitation or retardation, impaired judgment, or impaired social or occupational functioning) that developed during, or shortly after, opioid use.

C. Pupillary constriction (or pupillary dilation due to anoxia from severe overdose) and one (or more) of the following signs, developing during, or shortly after, opioid use:

(1) drowsiness or coma
(2) slurred speech
(3) impairment in attention or memory

D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

Specify if:

With Perceptual Disturbances

292.0 Opioid Withdrawal

Refer, in addition, to the text and criteria for Substance Withdrawal (see p. 201). The essential feature of Opioid Withdrawal is the presence of a characteristic withdrawal syndrome that develops after the cessation of (or reduction in) opioid use that has been heavy and prolonged (Criterion A1). The withdrawal syndrome can be also precipitated by administration of an opioid antagonist (e.g., naloxone or naltrexone) after a period of opioid use (Criterion A2). Opioid Withdrawal is characterized by a pattern of signs and symptoms that are opposite to the acute agonist effects. The first of these are subjective and consist of complaints of anxiety, restlessness, and an "achy feeling" that is often located in the back and legs, accompanied by a wish to obtain opioids ("craving") and drug-seeking behavior, along with irritability and increased sensitivity to pain. Three or more of the following must be present to make a diagnosis of Opioid Withdrawal: dysphoric mood; nausea or vomiting; muscle aches;